

DECEMBER 21, 1959

PURCHASING

The Methods and News Magazine for Industrial Buyers



1960 Business Outlook:

The Pressure's on Purchasing

page 11

Also in this issue: Christmas Gifts—Vendor Relations—Legislative Roundup



Picks up where Johnny Appleseed left off

BAREFOOT, he tramped thousands of miles, planting apple seeds wherever he went. Today he would be amazed at the orchards his followers have dotted across the land: *Johnny Appleseed never saw fruit so fine.*

One secret of today's wonder crop is the use of nitrogen-rich fertilizers. In the West, Shell Chemical supplies these plant food combinations keyed to the needs of or-

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Next time you bite into a juicy, crackling apple, remember that modern Johnny Appleseeds can always count on their partner Shell Chemical—pioneer in ammonia fertilizers.

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Chemical Partner of Industry and Agriculture

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DECEMBER 21, 1959

1



ECONOMICAL

The easiest way to make money is by saving money. And savings start when you cut tape application costs with SECURITY standard grade gummed tape. There's no secret to SECURITY's economical performance. We start with the finest raw materials, use an exclusive glue formula, maintain rigid quality control through each processing step . . . and scrutinize every inch of SECURITY with the watchful eye of AccuRay. The SECURITY glue coating is controlled with micrometric uniformity at the one level where sealing speed and holding power are greatest. When a standard grade gummed tape fits your needs, order SECURITY.

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B.F. Goodrich



Rubber gives staggering boxes a grip on themselves

THOSE boxes are so light that when they are stacked the slightest movement could send them crashing down. It was found that the whole pile could be steadied simply by tying the top layer of boxes together. But rope, wire and even pressure tape eventually get slack and slip down on the boxes—useless. Something was needed that could keep its grip indefinitely.

When a B.F. Goodrich man heard the problem, he suggested rubber bands. B.F. Goodrich engineers came up with giant versions of the familiar rubber band, measuring up to six feet long and stretching to 18 feet, which they called "pallet bands". The pallet



bands were tried in this warehouse and worked perfectly. In fact, the warehouse supervisor reports that because they can be used over and over again, the pallet bands will also pay for themselves in the first year.

New uses for B.F. Goodrich pallet bands are popping up every day. They're being used to stack cartons of tooth-

paste tubes. Furniture manufacturers use them to fasten heavy protective paper around chairs, davenports, and cushions before shipment. Cannery use them to wrap clusters of cans after they've been boiled.

If you have a packaging or warehousing problem that might be solved by these giant rubber bands, talk to your B.F. Goodrich distributor. He has full details on sizes and prices. And, as a factory-trained specialist in rubber products, he can answer your questions about the many rubber products B.F. Goodrich makes for industry. B.F. Goodrich Industrial Products Company, Dept. M-750, Akron 18, Ohio.

B.F. Goodrich *industrial rubber products*

DECEMBER 21, 1959

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Easy-to-form metals with high strength up to 1000 F

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PURCHASING

The Methods and News Magazine For Industrial Buyers

DECEMBER 21, 1959
VOLUME 47, No. 13

B. P. MAST
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Publisher

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THE **GOODYEAR DISTRIBUTOR** SCORES AGAIN!

Brickmaker's belt-life bettered by 24 to 1

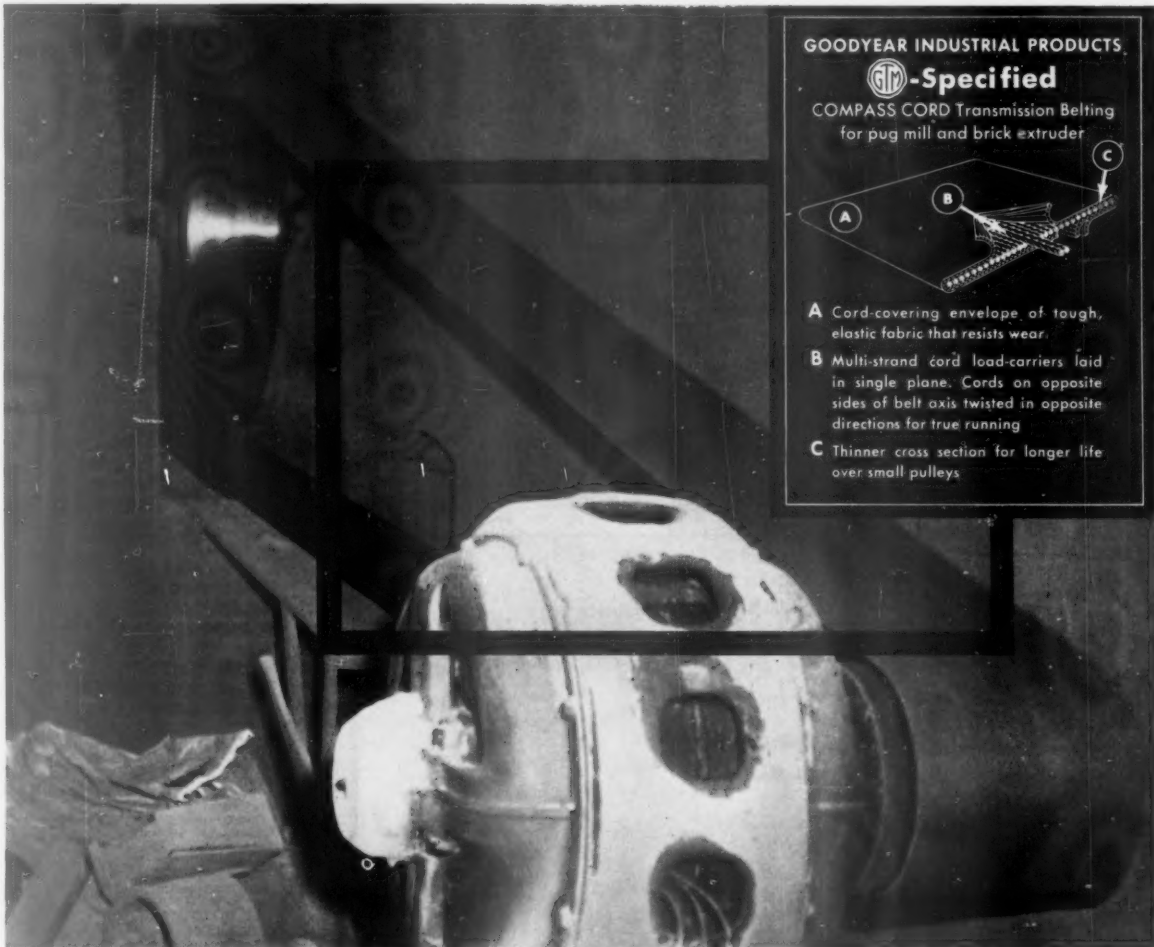
They'd always had belting headaches at this Mid-western brick plant. There was a great deal of slippage. The belt ran off the pulleys. At best, they could operate either their pug mill or the extruder — but never both at once. And even at this limping pace, a belt lasted only 6 months.

Then the local Goodyear Distributor looked over the situation, asked the G.T.M.—Goodyear Technical Man — to check it, too. Their joint recommendation: a COMPASS 50 Transmission Belt sinewed with rugged, stretch-resisting cord load-carriers.

That solved this belt-user's problem for a full 12

years. And during that time, he was able to operate both his pug mill and extruder full-blast — simultaneously.

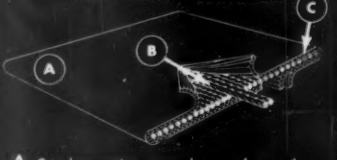
That's the kind of expert diagnosis and cure you, too, can expect from your Goodyear Distributor — whenever you ask him to doctor your industrial ills. He always has the G.T.M. on tap for technical consultation. And you can always find him in a hurry — by checking under "Rubber Goods" or "Rubber Products" in the Yellow Pages of your phone book. Or write Goodyear, Industrial Products Division, Akron 16, Ohio.



GOODYEAR INDUSTRIAL PRODUCTS

G.T.M. -Specified

COMPASS CORD Transmission Belting
for pug mill and brick extruder



- A** Cord-covering envelope of tough, elastic fabric that resists wear.
- B** Multi-strand cord load-carriers laid in single plane. Cords on opposite sides of belt axis twisted in opposite directions for true running.
- C** Thinner cross section for longer life over small pulleys.

Compass—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

GOOD YEAR

THE GREATEST NAME IN RUBBER

For More Information Write No. 157 on Inquiry Card—Page 32

Straws in the Trade Wind

► COAST-TO-COAST IN FIVE MINUTES—

Written, typed, or typeset purchase orders, specification sheets, documents, and line drawings can now be transmitted with telegraphic speed and accuracy. Western Union's new Wirefax service is available, as a starter, between New York, Washington, Chicago, Los Angeles, and San Francisco. The copy received is an exact facsimile of the original.

► BUYING FOR AUTOMOBILES—

One method that automobile manufacturers are using to keep their assembly lines moving despite steel shortages is to station buyers overseas to purchase foreign steel. With shortages persisting in certain areas, one carmaker has a man in Germany to pick up grades of steel unavailable here. Another has a buyer in Holland for the same purpose.

► THE VALUE OF MEETINGS—

How much value is derived from business conferences? Not too much, answers Executive Communications, Inc., a New York management consultant firm. In a recent study it determined that only 10% of the 300,000 meetings held by the top 100 industrial corporations in the last 18 months were effective. The result: a waste of some \$250 million annually.

For the P.A.'s Hot File . . .

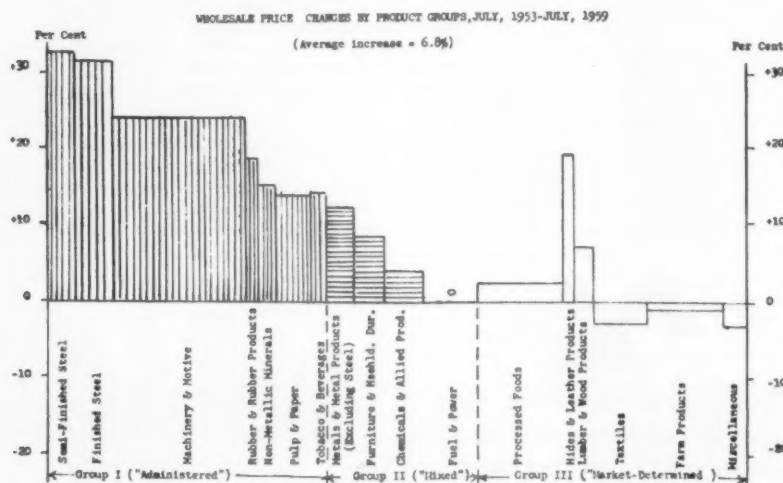
A midwestern chemical company is replacing its standard typewriters with portable electric machines in departments where only sporadic typing is required. Electric portables cost about \$50 less than standards, produce uniform impressions. Although they may not stand up as long as standards under normal use, the electrics will last for many years in places where occasional or hunt-and-peck typists work.

► DIAMONDS FOR INDUSTRIAL BONDING

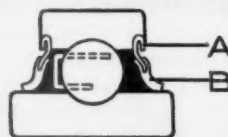
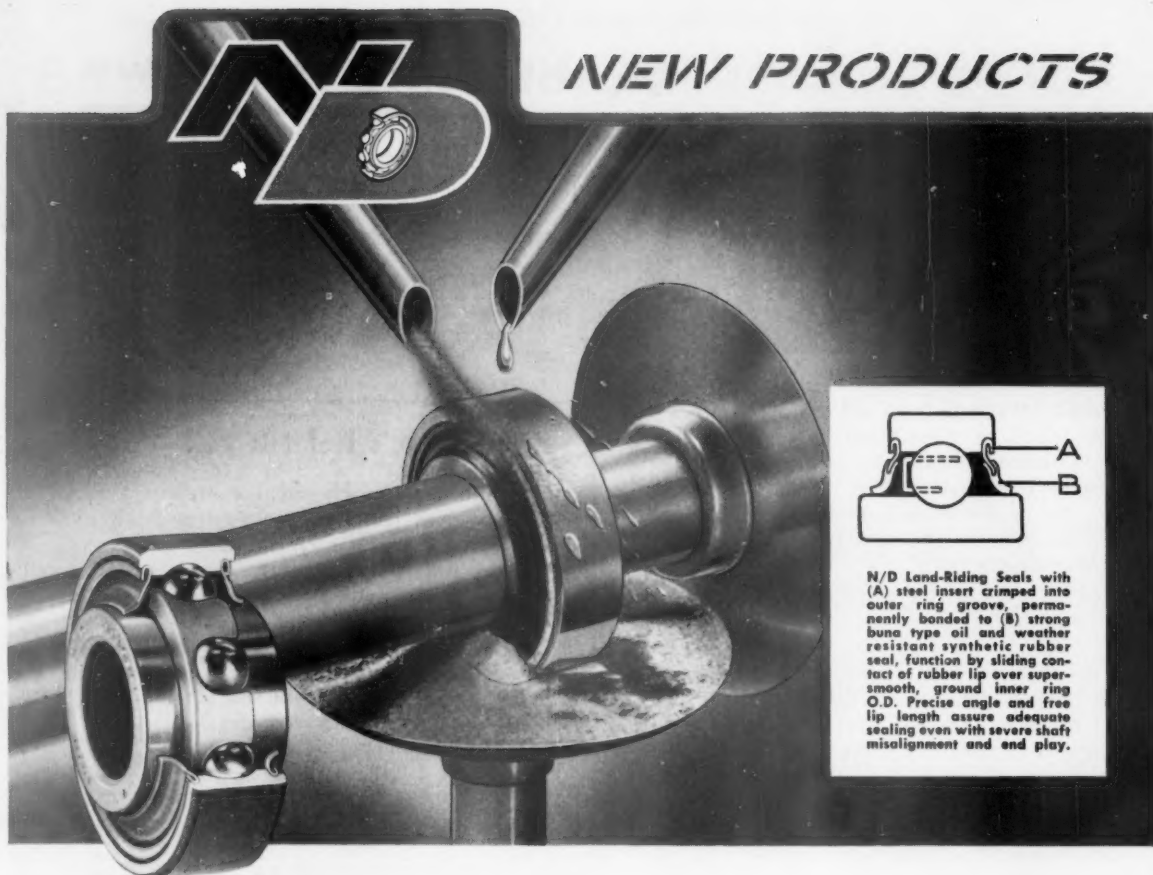
A new man-made diamond for use in metal bonded wheels has been announced. Previously synthetic diamonds have been available only for vitreous and resin bonded wheels. The new stone is not being sold yet but development and evaluation tests are now underway.

► METALWORKING BREAKDOWN—

More than 31,000 metalworking and metal producing plants in the U.S. employ 20 or more people,



This chart showing wholesale price changes of different materials was presented before the Congressional Joint Economic Committee by economist Robert K. Lanzillotti, who divided the products into three major groups according to his conception of price determination: "administered," "mixed," and "market-determined."



N/D Land-Riding Seals with (A) steel insert crimped into outer ring groove, permanently bonded to (B) strong buna type oil and weather resistant synthetic rubber seal, function by sliding contact of rubber lip over super-smooth, ground inner ring O.D. Precise angle and free lip length assure adequate sealing even with severe shaft misalignment and end play.

New **LAND-RIDING SEAL** *Ball Bearings* *Shut Out Moist Contaminants!*

New Departure lubricated-for-life Land-Riding Seal Ball Bearings offer new sales appeal for modern equipment by eliminating one of the last major problems in bearing performance — dependable operation in moist applications. N/D Land-Riding Seals *shut out all moist contaminants . . .* and provide long, maintenance-free bearing operation. Check over these three major advantages:

1. **MAINTENANCE FREE** — Land-Riding Seal Ball Bearings are precision built, sealed to keep out unwelcome dust and moisture! Where Land-Riding Seal Bearings are used, costly relubrication plumbing and maintenance is eliminated . . . they're lubricated-for-life. Also, ball bearings don't require periodic adjustment . . . they reduce costly down time.
2. **LONGER BEARING LIFE** — In the most severe applications, such as stone crusher baths, Land-Riding

Seals outlast other type seals by an amazing margin. They perform dependably at speeds up to 4000 rpm.

3. **WIDE RANGE OF APPLICATIONS** — Volume quantities of Land-Riding Seal Ball Bearings are now available in standard bore sizes for many applications where moist contaminants are a factor: automotive prop shafts and rear wheels, idler pulley assemblies, farm implements, conveyors and electric gear motors. Other new applications are being introduced.

For additional information on new N/D Land-Riding Seal Ball Bearings, or any of New Departure's complete line of sealed ball bearings for farm, automotive and general industry, contact the N/D representative in your area. New Departure Division, General Motors Corp., Bristol, Conn.


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BALL BEARINGS
proved reliability you can build around

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Straws in the Trade Wind

reports Dun & Bradstreet. Leading metalworking state, surprisingly enough, is New York with 3,502 plants. The next five top ranking states are California, Illinois, Ohio, Michigan, and Pennsylvania.

► **MUTUAL COOPERATION**—The Milwaukee Association of Purchasing Agents has hit on an idea to help its members who are still desperately short of steel. Its steel committee regularly canvasses members who use steel, asking them to note in detail (grades, lengths, etc.) what surplus they have and what types they need. Then it issues a list of these reports to those participating. A similar system was also established by the St. Louis Association.

► **TREND TOWARD RE-CENTRALIZATION?**—One of the most widely accepted post-war management principles has been de-centralization. Dozens of big corporations have broken up big central purchasing departments and set up a number of de-centralized departments with the P.A. responsible to the plant manager. This was supposed to make the plant manager fully responsible for all profit-making activities—including purchasing. But apparently it has worked better in theory than in practice. In many cases, buying power has been diluted,

commodity specialization by buyers has become more difficult, and more personnel have been necessary. Now two of the Big Three auto companies have done an about face by re-centralizing purchasing departments that had been decentralized. Only holdout is General Motors—which still has separate purchasing departments for each division.

► **WHAT BOTHERS BUSINESSMEN**—Government spending and the bond interest rate are two of the primary concerns of businessmen, says the Chamber of Commerce of the United States. Other current issues of major interest to the business community, it says, are tax reform, curbs on federal intervention in state and local affairs, labor legislation, and prevention of more federal controls on business and agriculture.

► **GETTING A TAX BREAK**—Corporations that qualify as Western Hemisphere Trade Corporations are granted certain tax advantages. But in order to qualify, companies must transact all their business in the Western Hemisphere, other than "incidental purchases." One check used by the Internal Revenue Service to determine if purchases are actually "incidental": they must not exceed 5% of gross receipts.



Tilford C. Gaines

QUOTE!

The dangers of inflation have been spotlighted by Tilford C. Gaines, research department manager of the New York Federal Reserve Bank. Mr. Gaines says "nothing could be further from the truth than the suggestion that toleration of creeping inflation would be a relatively costless matter . . . It hardly seems likely that public policies which permitted a condition in which the economy became more unstable and in which investment in our basic educational and service resources was reduced would be calculated to promote maximum economic well-being." Other harmful consequences are 1) "economic and social inequities and distortions that would result" and 2) "the undermining—perhaps destruction—of the dollar as the international currency upon which the economic recovery of the Western world has been built."

Look what paper is doing now:

- * Explosive situation
- * Makes saving a pleasure
- * Wise owls never jaywalk

* **Dynamite detonator tubes** are made by winding a tough Riegel paper called "Red Detonator" around a mandrel. Needless to say, it's an extraordinary paper, combining high strength, weather resistance and easy formability with other technical properties. One more example of Riegel engineered papers.

* **Gone is the drab, gray envelope** for bank books! Savings accounts now come alive with colorful printing, peek-a-boo windows, ingenious "Snap-it" flaps, slogans or special goals printed on front. For strength,



color, and printability, many such envelopes now use Riegel's Jersey and other strong Riegel papers.

* **Look when you cross the street:** in New York you'll find these posters spotlighting an intensive anti-jaywalking campaign. To prolong the life of the posters as well as the

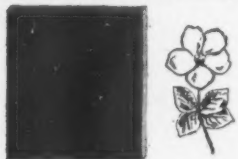


walkers, they're printed on Riegel's Weatherproof Bristol . . . good for all outdoor work.

* **Have you problem** that may be solved by a better paper? Just write to Riegel Paper Corporation, P.O. Box 250, New York 16, N.Y.

- * Printing that shrank
- * Pudding cake as easy as A, B
- * Synthetic paper

* **Flexographic printing plates** often shrank or distorted in the making. Trouble lay in the matrix. Wood Flong Corporation, a leading manufacturer of matrixes, asked



Riegel to look into it. Result, Thermomat® . . . an extremely rigid matrix made with a special Riegel paper, coated with plastic, calendered to unusually accurate caliper . . . and no more printing plate shrinkage.

* **Whip up a batter** from Pouch A . . . sprinkle Pouch B over it . . . pour in a little water and bake. Presto, a delicious Pillsbury pudding cake!



Both pouches are Riegel protective papers . . . sauce mix in poly-coated pouch paper, cake mix in laminate of pouch paper and foil.

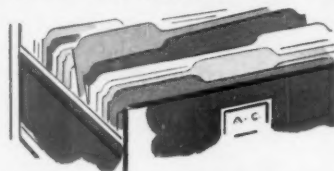
* **Paper made of synthetic fibers** . . . a sheet endowed with excellent uniformity, stability, and chemical resistance . . . offers intriguing possibilities. Where can you use it? (We can also make papers with asbestos, glass and other unusual fibers.)

* **When you're stuck with a problem**, one of Riegel's 600 different papers may help. Write Riegel Paper Corp., P. O. Box 250, New York 16.

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- * Color for organized files
- * Pillows of mint delight

* **In offset printing**, critical pressures between paper and plate are adjusted by paper "shims", packed under the plates. For years, any old paper was used, but thin spots, slippage and crushing plagued the lithographers. Riegel now offers a crush-proof, slip-proof paper made to accurate caliper, graduated in thousandths. Offset presses roll in less time . . . with a better job for all.

* **To keep you from getting mixed up**, Oxford File Folders now come in assorted colors. Handy pack of 12 has four each of pink, blue, and



green. They're made of a special Riegel paper, geared to a real tough life.

* **Hershey's brand new "Mint Chocolates"** are sold in attractive pillow-packs . . . made of a special Riegel protective paper called



"Pouchpak"*. Neat, simple, colorfully printed on our new 8-color gravure . . . heat-seal coated. *T.M.

* **Have you a problem** that may be solved by a better paper? Just write to Riegel Paper Corporation, P.O. Box 250, New York 16, N.Y.

Now...what can we do for you!

Riegel

TECHNICAL PAPERS FOR INDUSTRY

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Business in 1960: The P.A.'s View

Purchasing agents believe that next year will be a good one for business. But they're worried about 1) strikes in key industries and 2) increased foreign competition. Here's what they have to say.



ALMOST no one expects business to be bad in 1960. Economists almost universally expect business to be as good or better in 1960 than it was in 1959. Purchasing executives are equally optimistic; 77% of the respondents to this month's Purchasing Opinion Poll (see page 15) expect business to be better next year. And only 3% expect it to be worse.

However, purchasing agents are definitely less optimistic this year than they were last year. A year ago, 87% respondents to the same survey thought business would improve in 1959. At that time, of course, the economy was in the process of turning up strongly from the low point in the 1957-58 recession which was reached in May 1958. Now the economy is coasting after dropping off slightly from new record highs reached before the steel strike began to hurt.

Certainly a good part of the slight drop in P.A. optimism—as compared with the year-ago view—comes from the simple fact that

improvement comes easier to an economy moving up from recession lows than it does to one near record highs. But it is also significant that purchasing men hedge their 1960 bullishness with several big IFs.

They say business will be better IF there isn't a crippling strike in the railroad or steel industries.



Despite the expected business boom, management plans to keep a tight rein on purchasing budgets.

Some P.A.'s are also worried about the effect of an easing of the cold war and sharply reduced defense spending and are also concerned about the inroads being made by foreign producers.

More of Same

This year, as last, P.A.'s almost universally agree that prices will continue to creep upward. Last year, 62% of the respondents predicted higher prices; this year 71% see nothing but more inflation. Both this year and last, only 1% of the respondents were brash enough to predict lower overall prices.

Despite the steel industry's widely publicized anti-inflationary position, about 80% of the steel-using P.A.'s predict higher prices for steel and steel products. Nearly 20% predict increases in brass and copper products.

Although practically no one expects average prices to be lower in 1960, many P.A.'s expect certain commodities to be lower. A number of respondents pre-

INTRODUCING AN ALL ELECTRIC, VARIABLE SPEED DRIVE FOR UNDER \$220.* THE FRACTIONAL hp. V*S Jr.



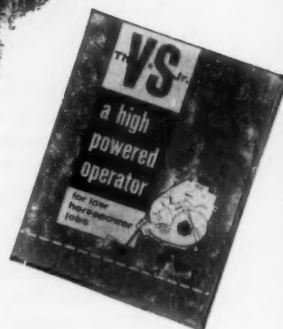
Now you can gain the efficiency of stepless speed changes for smaller machines. The new fractional V*S Jr. puts complete machine control at your operator's fingertips, for less than \$220.*

The fractional V*S Jr. will vary drive motors speeds from 215 thru 1725 rpm. Speeds can be changed through this 8:1 range by a simple turn of the selector dial. Speed changes can be made while the machine is operating or pre-selected before starting.

This packaged drive provides start, stop and stepless speed changes from in-plant a-c. power. Jog, reverse, and braking functions are available for more flexibility. The fractional V*S Jr. is available from 1/8 thru 3/4 hp. in all enclosures with standard or gearmotor, and is a new addition to the integral V*S Jr. line, 1 thru 4 hp.

*1/8 hp. drive complete with motor, controls, and operators panel.

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Special Industry Report:

dicted that agricultural products, plastics, and chemicals would be cheaper in 1960 than they were in 1959.

Short Term Outlook

Almost every economic and political barometer seems to justify P.A. optimism. Particularly interesting are expected inventory trends, the auto outlook, the political situation, capital goods expectations, and foreign trade.

Inventories Up After pausing because of steel shortages, industrial inventories are rising rapidly once again. They're currently up about \$3 billion from their 1958 recession low. A continuation of this rise, which was interrupted by the steel strike, is almost inevitable. Inventories should increase by at least another \$3 billion in 1960 to reach new record levels. This spending in excess of consumption will act

as a powerful stimulus to the economy.

Detroit is Bullish Once it licks its steel problems, the auto industry seems likely to pull out all the stops in 1960. Not only is there a big demand for the new compacts, but the public seems to have renewed its new appetite for the long tail-finned versions. The industry may be producing at an eight-million car a year clip in the first and second quarters. The result: a multi-billion dollar stimulus to the over-all economy.

It's An Election Year Both the Administration and the Congress are against inflation and for the balanced budget. But they're not going to do very much other than talk about them in 1960. Tight money, high interest rates, high taxes and reduced government spending are all politically unpopular. Political realists can't foresee money getting much tighter (the Federal Reserve knows

an election is coming up too) nor can they foresee Congress eagerly voting new taxes or cutting spending. So, politically, it's safe to predict that no one will do anything to curb the boom much in 1960. There will be far more conversation about inflation than action against it.

Capital Goods The rule of thumb in business forecasting is that capital goods spending always picks up months after other economic barometers bounce back from their recession lows. Capital goods spending is doing just that at present. Plant and equipment expenditures during the first quarter of 1960 will be at least \$5 billion higher than they were a year before and will probably continue to rise during 1960 at a billion dollar a quarter clip.

Foreign Trade The American economy has been losing gold at the rate of over \$2 billion a year. This has been a drain on the economy. This gold outflow will probably either be reduced or checked entirely in 1960. Western European and Asian countries have already liberalized many trade restrictions which prevented American goods from entering their markets.

In addition, our own government has taken steps to insure that U. S. foreign aid money is spent with American industry. Further government action is likely if the gold outflow continues; our government can hardly afford to sit idly by if the gold outflow threatens the stability of the dollar which it will do if it is allowed to continue unchecked.

With all these barometers heading upward, it's no wonder that P.A.'s are highly optimistic about 1960. And this very optimism—which is bound to be translated into buying decisions—could be one of the key factors in boosting the economy to a record high next year.

P. A.'s Predictions for 1960

Gross National Product: About \$500 billion

Increases in industrial and commercial investment spending and government spending will push GNP to a new record.

Industrial Production: Up 10% over 1959

Heavy demand should push the Federal Reserve's industrial production index to 165. One qualification: no crippling strikes.

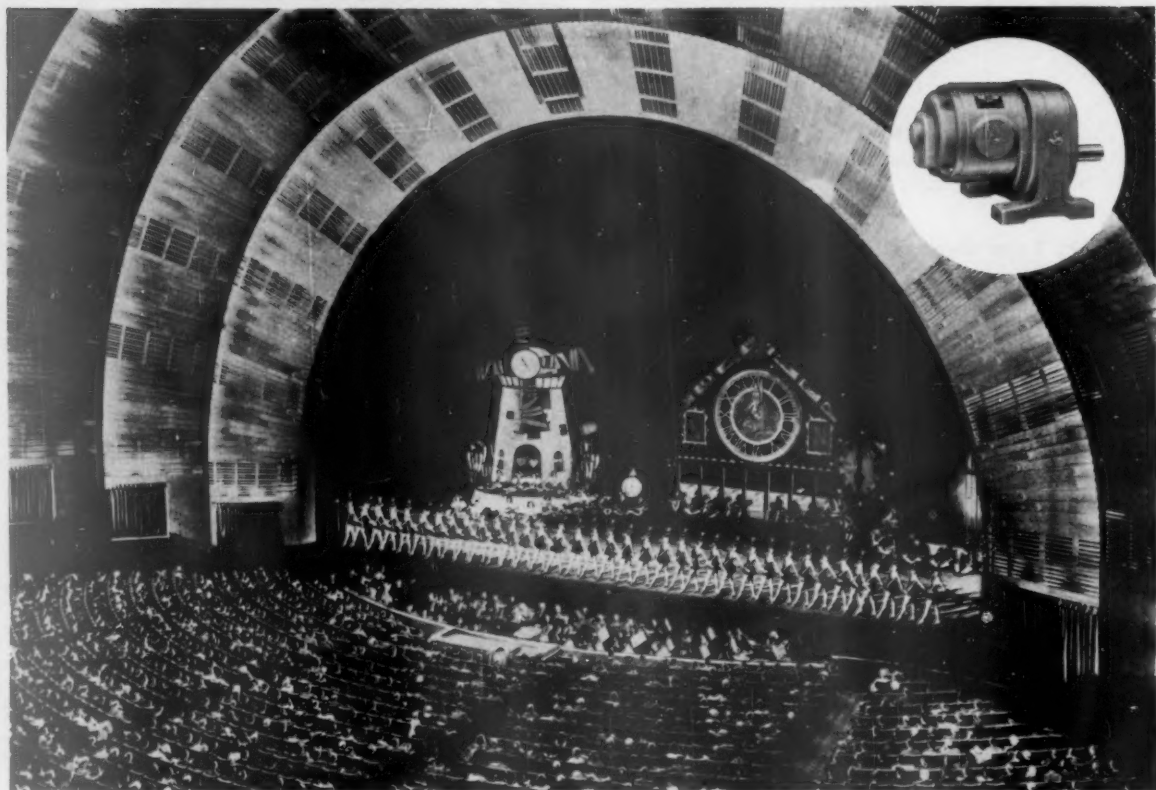
Prices: Up 2% overall

Industrial prices will continue to rise but, this year, their increase won't be offset by a corresponding decline in farm prices.

Money: Interest rates should stay high

Inventory accumulation, construction, and government needs will keep demand for money high. Interest rates will go up slightly.

OUTSTANDING PERFORMANCE AT RADIO CITY MUSIC HALL... ANOTHER STERLING SLO-SPEED SUCCESS STORY!



To power the complex, controlled movements of its mammoth stage settings, Radio City Music Hall, the nation's largest theater, relies on Sterling Slo-Speed for crane and hoist duty electric power drives.

Mr. Peter Tozzi, Vice President of American Stage Equipment & Iron Works, Inc., who installed these Sterling Gear Motors, tells of their selection:

"After investigating a variety of methods for the effective control of these intricate stage settings, we decided on Sterling Slo-Speed gear motors.

"10 years of quiet, trouble-free operation have proved that Sterling Slo-Speed gear motors were the right choice. Their smooth and efficient performance has been outstanding."



Only STERLING SLO-SPEED Gear Motors provide these important advantages for efficient speed reduction:

- The unique offset gear construction eliminates wasted space. The more compact gear train design utilizes wider and larger diameter gears for greater strength and lower tooth pressure. The design of the gear case affords greater rigidity and strength.
 - The tooth profile and helix angle of Sterling gears provide quiet operation and multiple-tooth contact with low thrust on bearings. Sterling helical gears, used in combination with heat-treated alloy steel pinions, insure maximum service life and trouble-free operation.
 - Sterling positive oil seals keep oil in for maximum lubrication and leak-proof protection. Dirt and moisture are sealed out. Oil seals are impervious to chemical action of the lubricant.
 - Sterling's oil sealing method and dip-splash lubrication permit universal mounting—vertically, shaft up or down, or in any horizontal position.
- For additional information about the unmatched advantages of Sterling Slo-Speed Gear Motors for your application, please request a copy of our Bulletin 191.



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Offices and stocks in all principal cities. Over 400 distributors throughout the country to serve you.

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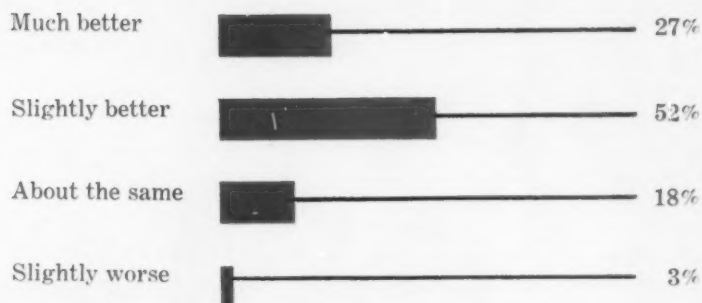
PURCHASING

PURCHASING OPINION

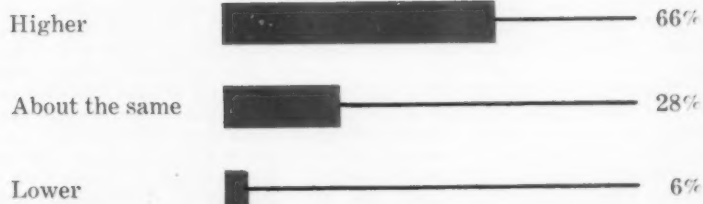
What's the '60 Business Outlook?

Purchasing Agents will be called upon to make many important decisions in 1960. Since their opinions about business conditions affect their buying policies, their views on the '60 business outlook are quite meaningful. For it is their responsibility to anticipate supply difficulties, price hikes and cuts, labor unrest, etc. before making their buying plans for the year. We asked a representative cross-section of purchasing executives a number of questions about economic conditions in the forthcoming year. Their combined answers follow:

1. How do you think the general business outlook for 1960 compares with the record of 1959?



2. Do you expect that your company's volume of purchasing for the year will be higher or lower than in 1959?





How purchasing can contribute to company profits ... WITH TEXACO ORGANIZED LUBRICATION

Cost-conscious purchasing agents in virtually every type of industry have found a new way to lower purchasing costs, free capital and thus raise company profits. They've helped institute a Texaco Organized Lubrication Plan.

The Texaco Plan can cut your lubricant purchase orders by as much as 80 percent. Inventory will shrink almost as much, releasing valuable storage space and—more important—freeing capital for more useful purposes. The Texaco Plan does this by providing, among other things, a *minimum*

number of multi-purpose and specialty lubricants.

Managers throughout the U.S. who have installed and evaluated Organized Lubrication programs can testify to the profit gained.

Texaco Lubrication Engineers can offer help and helpful material to start an Organized Lubrication program in your plant. Why don't you look into it? Call our expert—or write for a copy of our book: "Organized Lubrication ... Major Cost Control Factor." Texaco Inc., 135 East 42nd Street, New York 17, New York, Dept. P-131.

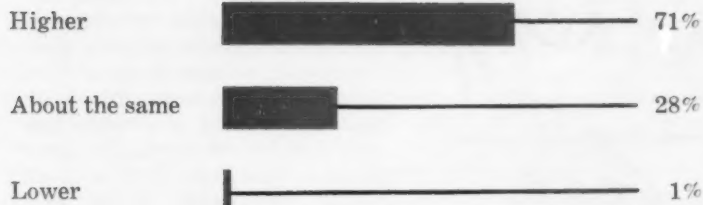


LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

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Purchasing Opinion

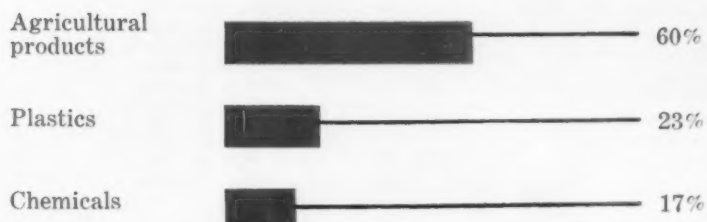
3. Do you expect the general level of prices on purchased materials in 1960 to be higher, lower, or about the same as now?



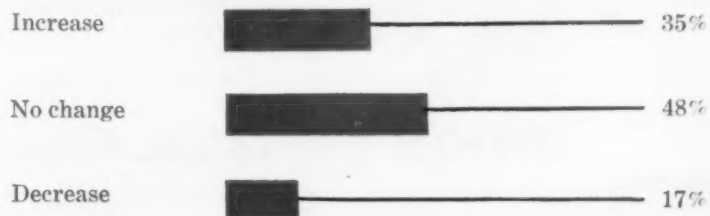
4. In what specific commodities do you expect significant price hikes?



5. In what specific commodities do you expect significant price cuts?



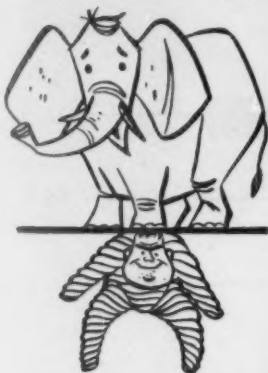
6. What change do you anticipate in your inventory position during 1960?



Tuffy Tips

—on safe use of
Slings and Hoist Lines

How Much Lifting Should be Done by Muscles?



Individual differences between workers make this a hard question to answer categorically. For a rule of thumb: the United States Department of Labor recommends men should handle no more than 50 pounds; women no more than 25 pounds. Of course, this is for men and women of average size and weight, in normally good physical condition. To remove all doubt, mechanical lifting and hoisting equipment should be used for all loads not comfortably lifted by muscles.

Rules to Remember For Wire Rope Safety

1. **BREAK IN** new wire rope with care. Don't use it at maximum load capacity until it is broken in beyond a doubt.
2. **OBSERVE SAFETY FACTORS.** Usually the rated load factor is 4 to 5. The Wire Rope Technical Board says 5. Elevators require 10. Static ropes — not hoisting, dragging or actively operating — may have a rated load factor of 3.

3. **LUBRICATION IS IMPORTANT** for safety, as well as for pliability and friction-fighting. Rust makes ropes brittle, and likely to break without warning. Thorough lubrication keeps out rust.

4. **INSPECT ROPES** and slings frequently for signs of serious wear. Careful inspection may save costly work stoppage or serious injury.

Sling Fittings Are Important Safety Aids

Proper fittings serve the dual purpose of greater safety and longer sling life. Fittings used on Tuffy Slings are made in more than a score of types, for every kind of service. Two of them are shown here:

(1) **EYE HOOKS:** Fittings for Tuffy Slings are selected on the basis of providing the complete unit assembly with equal breaking strength overall. Eye hooks are forged steel, weldless and designed for efficiency.



(2) **NEWCO SAFETY HOOK:** People can forget to lock a hook gate. This safety hook always remembers. A load cannot be lifted without the gate (yoke) automatically locking. To be opened, it must be manually pressed against a compression spring. We also supply this safety hook with a swivel eye for the sling. The name: Newco Safety Swivel Hook.



Tuffy Hoist Line: Stalwart Companion of Tuffy Slings

Tuffy Slings and Hoist Lines work as an efficient team on all types of overhead cranes, derricks and clamshells. Like all Tuffy Special Purpose Wire Ropes, Tuffy Hoist Line has the



right combination of strength, flexibility and toughness for greatest safety and longest service life. Use this Tuffy "team" to cut hoisting costs in every type of materials handling.

Your Tuffy Distributor Offers the Most in Service and Savings

UNION  **Wire Rope**

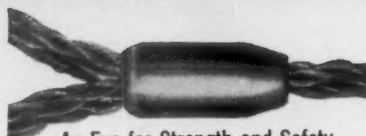
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Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Southwest Steel Products



S1

18



An Eye for Strength and Safety

Slipped over the tuck-splice of the sling eye, and pressed on under tremendous hydraulic pressure, the steel ferrule holds so tight that it gives the eye splice full strength of the fabric. What's more, it is smoothly tapered to meet the main body of the sling. No abrupt edges or rough projections to injure hands and slow down work. The extra life, efficiency and safety of Tuffy's pressed-on ferrule is yours at no extra cost.



Tuffy Leads with Two Lives

"Tuffy Slings give us double the service life of ordinary slings." So reported one of the big steel corporations. The secret of Tuffy's extra life: the patented 9-part machine-braided fabric. It provides a combination of flexibility and strength never possible with ordinary wire rope.



Tuffy Takes the Danger Out of Kinks

In the first place, Tuffy Slings are not likely to kink at all. Try to kink a Tuffy. Even if you succeed with the aid of a vise, the kink can be easily straightened out with no material damage. Tuffy's machine-braided fabric won't take a "set" or deformity under the toughest of ordinary working conditions. So the danger of rope-weakening kinks is eliminated.

FREE! New Tuffy Sling Handbook

Revised and enlarged edition of famous sling manual. Covers all the bases in selection and use of Tuffy Slings and sling fittings. Gives types, dimensions, weights and rated loads. Even includes safety-approved standard signals used in operation of various equipment. Send for your free copy now. Write **Union Wire Rope Corporation, 2282 Manchester Ave., Kansas City 26, Mo.**

... Specialists in high-carbon wire, wire rope, braided wire fabric and stress relieved wire and strand.



New steels are
born at
Armco

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PURCHASING

THE SAGINAW^{b/b} SCREW SAVED THE DAY WHEN...

A Garland Telescopic Crane Had to Lift an Atlas Missile!

"We were *really* up against it when we had to put up a 3-ton Atlas Missile for display at the World Congress of Flight in Las Vegas. Our telescopic crane was unable to "boom up" that much weight, with the high-friction threaded shaft we'd been using. Thanks to the competent assistance of your factory representative, and prompt delivery of the proper Saginaw Ball Bearing Screw, we licked the problem over a week-end. The Saginaw Screw's 90%-plus efficiency *actually tripled* our crane's boom-raising capability! It even brought us a *second* order from the Air Force. We're not only going to add Saginaw Screws to every new Garland crane, but install them in every one of the 1200 Garland cranes already in use!" says Carl Frye, Sales Manager, Garland Crane Co., Long Beach, California.

Perhaps the Saginaw b/b Screw can give your products that greater Sales Appeal you're looking for. Want details? Just write or phone Saginaw Steering Gear Division, General Motors Corporation, Saginaw, Michigan—world's largest producers of b/b screws and splines.

The Saginaw b/b Screw converts rotary motion into linear motion with over 90% efficiency. Saves power, space, weight, gives day-in, day-out dependability.

Boom used to raise Able into position for fastening onto Thor missile.

A Size and Type for Every Need...

Have been built as small as $\frac{3}{16}$ in. B.C.D. and $1\frac{1}{2}$ in. long, as large as 6 in. B.C.D. and 40 ft. long. Larger sizes can be built to your order.

WORLD'S MOST EFFICIENT ACTUATION DEVICE

Saginaw
ball bearing Screw

The important figure in buying **coal** is the cost per **1000 pounds of steam**. Right?

Good reason to specify Island Creek coal
It's **Precisioneered***



Sizes below 1/4" receive special attention. Here, centrifugal driers remove moisture accumulated during the wet cleaning process.

* **PRECISIONEERING.** Just where do you look for it at Island Creek? You'll see it at the mine face—in the superior seams of eastern coal. You'll see it throughout the great preparation plants where the most precise procedures and laboratory controls enable Island Creek to manufacture coal to the most exacting specifications. You'll see it in the far-reaching reports of Island Creek engineers . . . in their searching evaluation studies. You'll see it

also in the things you can't actually see . . . but can only sense . . . the obvious dedication of a career company to its career, coal. It all adds up to—"Precisioneering" . . . and, more importantly, to coal that produces steam at the lowest net cost per 1000 lbs.—in your burning equipment. Our engineers would like to lay some interesting case histories before you and your plant people. Write. Or phone. No obligation, of course.

ISLAND CREEK **Precisioneered Coal**

You can depend on Island Creek . . . a career company . . . dedicated to coal

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Administration Plans for Fiscal '61: Balanced Budget, No Tax Cut

SOUND MONEY and balanced budgets have become the recurrent theme of Administration spokesmen in establishing the pattern for the economy during fiscal 1961.

In fiscal 1960, the long drawn-out strikes pinched off a good amount of the tax revenue that was counted on to balance government's spending. Therefore it is now generally accepted that the current budget will wind up with a deficit.

For the next fiscal year—even though much has been said about the desirability of reducing taxes—no cuts are expected. If the present schedule of rates is applied to a boom level in the economy, there is likely to be a budget surplus.

Fiscal prudence, as preached by the Administration, is also expected to extend through much of the new year. Only a sharp downturn in the economy could bring about a reversal in policy.

Boom in '60

Based on reports by government forecasters and private analysts, the period ahead will be of boom proportions. Some industries, however, will fare better than others.

There are varying estimates about the magnitude of capital spending by industry but there is no question that plant and equipment spending will be up sharply.

Of major significance to purchasing agents is the fact that

many industries which are large consumers of basic materials expect a sharp increase in their rate of activity in the next 12 months.

In construction, while the number of housing starts is expected to drop, the overall level should be higher than in '59. The drop in home construction will mean less demand for labor and some drop in household equipment sales. But the commercial and industrial construction increase will more than offset this drop.

The auto industry—a major consumer of raw materials—also expects a good year. Some of the increase in the production rate will be due to the compact cars. The tonnage of materials going into these units obviously is less than in standard models, but the total number of cars is expected to be above the '59 rate.

A point for the future: if experience shows that the volume of automobile sales goes up sharply through the introduction of compact units, it is likely that more lines of simplified products will be planned for other consumer goods.

● Congress Probes Reasons For Inflationary Push

Economic analysts continue to add the weight of their opinion to an expanding volume of testimony being gathered by the Congressional Joint Economic Committee.

Much of their forecasting concerns the areas of wages, costs, and prices. The main theme of practically all of the testimony is that we have not experienced a violent inflation, nor is such a cycle in store for us. But the economists differ in their views



The new Secretary of Defense, Thomas S. Gates (l.) has inherited a major financial and political problem from his predecessor, Neil H. McElroy: the fiscal 1961 defense budget.

Greater Corrosion Resistance

Longer Fatigue Life

Less Product Incrustation



new tests prove

CONTOUR-WELDED* STAINLESS TUBING *provides all three!*

A recent series of tests prove TRENTWELD® tubing, made by the exclusive *Contour-Weld* process, is smoother than any other full-finished tubing. And still other tests show this extra smoothness ensures longer fatigue life, greater resistance to corrosion and less product incrustation.

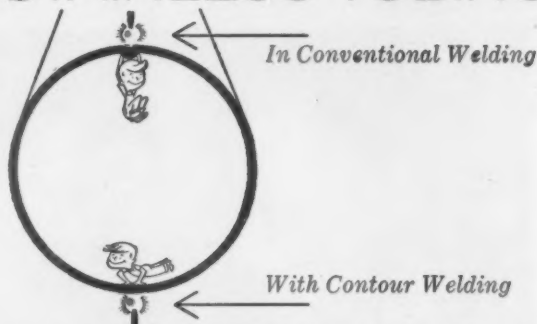
But here's why *Contour-welded* tubing is smoother inside:

First, it's smoother than seamless because it's formed from uniformly rolled strip steel, whereas seamless must be extruded or pierced.

And second, it's smoother than other welded tubing because the Trent-patented *Contour-Weld* process virtually eliminates the weld bead.

But why not get full details on *Contour welded* tubing's superiority? Send for the free 48-page "Trent Weld Manual." It's chock-full of details on *Contour-welded* tubing in sizes from 1/4" to 40" — in stainless and high alloy steels, titanium, zirconium, zircaloy and Hastelloy†. Write: Trent Tube Company, Box 2518, Pittsburgh, Pa.

†Trademark Haynes Stellite Co.



In CONVENTIONAL WELDING of tubes, gravity pulls molten metal down to form a bead that is difficult to remove by cold working. And cold working may lead to undercuts, focal points for fatigue cracks and corrosive attacks. Cleaning becomes difficult.

*With CONTOUR WELDING the tube is welded at the bottom. Gravity still pulls the molten metal down inside the tube, but now the weld area corresponds to the contour of the tube. There's virtually no weld bulge on the inside surface. And even on the O.D., the weld seam more closely conforms to the contour of the tubing.



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TRENT TUBE COMPANY

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For More Information Write No. 165 on Inquiry Card—Page 32

Washington Report

about the reasons for the rising level of prices.

For example, H. S. Houthakker, of Stanford University, claims:

"The present inflation is transitional, being a consequence of the increase in demand for risky assets and the willingness to incur debts. It is not due to Federal extravagance, and in practice cannot be cured by a tight money policy. Barring unforeseen contingencies, the end of inflation is foreseen within five years."

In another section of his analysis, Houthakker suggests that the mainspring of the inflation has been the public's adjustment to a policy of full employment.

Capital Goods Will Soar

From another analyst, Colin G. Clark, director of research of The Econometric Institute, comes the testimony that:

"The rise in prices, which will be temporarily checked in the first half of 1960, will again be resumed in the latter part of 1960 . . .

"We see wage earnings going up. We see corporate profits going up, a lesser rise in dividends, and we see savings failing to rise. We see also a rise in the sales of producer durables, but not a very adequate one.

"We attach particular importance to the figures of unfilled orders, because they exert a powerful influence on other elements in the economic system. And you will notice our figures for unfilled orders for nondurable goods are declining. We do not see any great pressure of orders in the nondurable sector, but among all types of durable goods we see a progressively increasing amount of unfilled orders. We see 1960 a boom year for the capital goods and durable goods industries."

A Calculated Risk

There is little inclination on the part of most economists to have the government take a much bigger hand in the economy. And they are also concerned with area unemployment. In some areas, the

number of jobless is big even during a period of boom—and naturally gets bigger when there is a recession.

George H. Hildebrand, professor of economics and director of the Institute of Industrial Relations at the University of California, suggests that fiscal and monetary restraints on the economy result in too much unemployment and idle plant capacity. Government induced restraints, he feels, have brought a series of weak booms, broken at frequent intervals by recessions. As a result, he believes our rate of growth has been slower than it should be.

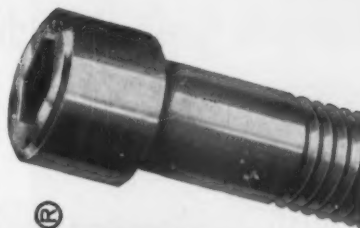
What Hildebrand proposes is that . . . "we take a calculated risk with a somewhat more liberal policy in the monetary field, coupled with changes in the taxation of corporate profits and in depreciation allowances that would stimulate more investment of a productivity creating type. Productivity would also be helped under this approach by increased use of existing plants where economies of volume could be obtained in greater measure.

"Much good could also be accomplished by starting a cutback of the enormous subsidies to agriculture, diverting them to tax savings and to more productive fiscal uses and at the same time permitting abandonment of the present uneconomic support-price system.

"There are also clear advantages in encouraging rather than obstructing competitive imports as a means of policing more effectively the price and wage policies of some of the more highly concentrated industries. The same purpose would also be served by making it easier for new competitors to enter certain fields."

• New Regulation Gives Gov't. More Supply Data

A new defense materials regulation (DMS Regulation No. 1), issued by the Business and Defense Services Administration of

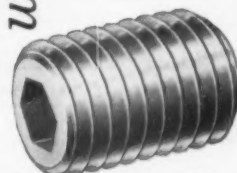


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New Cold Caustic Bleach Process

Looking for a way to use greater amounts of low-cost, more plentiful pulp—without capital investment for bleach equipment? Then let a Becco Sales Engineer show you our new technique* which allows you to bleach in the same equipment regularly used for the manufacture of cold caustic pulp.

In this new process, peroxide bleach liquor is added at the Bauer Refiner, and bleaching occurs during the refining operation. Bleach response depends on refiner densities.

Up to 20 points brightness increase has been obtained in commercial operations to date, and with no additional steam costs, no holding time, and no excessive chemical costs.

Becco can assist you immediately in setting up a production run and evaluating results. First step: use the coupon to let us know you're interested.

*—Patent Pending



"Enclosing \$1.00 —
Send Patent License"

Well, perhaps there's a little more to your gaining use of Becco patents than just mailing your dollar in, but not much more. And certainly, no more money. The \$1.00 really does cover it.

Becco has lots of patents, granted as a result of innovations in the use of Hydrogen Peroxide and other Peroxygen chemicals developed in Becco's Research Laboratories. But they don't do us a whole lot of good locked tightly in our safe. So, we long ago adopted the following policy:

If one of our patents can help you, we'll be glad to license the rights to you *perpetually*, for just one dollar. You get a nice certificate, incidentally, to cover the legalities, but more important — you also get free our complete engineering help in setting up your process, handling the material, maintenance, etc., etc.

What do we get? You as a customer — we hope — but there's no obligation on your part. Just seems to work out that way, though — when we know enough about a particular peroxygen to hold a patent on its use, chances are we've also learned enough to produce it purer than anyone else. You benefit from this; we do, too.

Use the coupon below to ask for a Sales Engineer — or our list of patents — that may help you solve an important problem.

Problems in handling Hydrogen Peroxide



Becco's Four-Fold Engineering Service Program — offered free — includes:

1. Comprehensive survey of your facilities.
2. Specific proposal with recommendation of proved equipment and where it is obtainable.
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Can you use this free Becco help, based on more years of experience with bulk handling of H_2O_2 than any other manufacturer? Use the coupon to let us know.

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Please have a Sales Engineer give me more information on Becco's Cold Caustic Bleach Process.

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Gentlemen:

Please send your list of patents available on the use of

- ☐ Hydrogen Peroxide
☐ Peroxygen Chemicals
☐ Persulfate Chemicals
☐ Please have a Sales Engineer call.

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BECCO CHEMICAL DIVISION, FMC
Station B, Buffalo, New York

Dept. PM-B

Gentlemen:

Please tell me more about your Four-Fold Engineering Service.

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Washington Report

the Department of Commerce, is designed to give the government more accurate information about the flow of materials into defense and atomic industry.

The first change is the new requirement that contractors and suppliers in defense, atomic, and space programs identify all their defense purchase orders with the appropriate program symbols and ratings. This identification was not mandatory before—and in areas where supply was no problem, contractors tended to ignore this type of paperwork. The only exemption from the identification requirement is an optional one for individual purchase orders of \$500 or less.

Another major change is that producers of steel, copper, aluminum, and nickel alloys are required to accept "DX" ratings without regard to lead time, unless it is impracticable to do so. This gives orders carrying the "DX" rating a priority in getting on already established mill schedules.

The new regulation also calls for allotments of controlled materials to be made at the user level all along the chain of supply. The prime contractor gets an allotment of the materials he requires and a rating. The rating is passed along the chain of supply, with each level getting an allotment. In this way, the government will have precise information on the use of controlled materials at all levels.

A new schedule has been added to the regulation, containing the form DMS-6. This form will have the important function of providing a bill of materials at the prime as well as at all other supply levels.

Copies of the new regulation are available from William C. Truppner, Director of the Office of Industrial Mobilization, Room 4870, Department of Commerce, Washington 25, D.C. Information on specific problems can be obtained from Arthur U. Sufrin in the same division.

—A. N. Wecksler

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DECEMBER 21, 1959



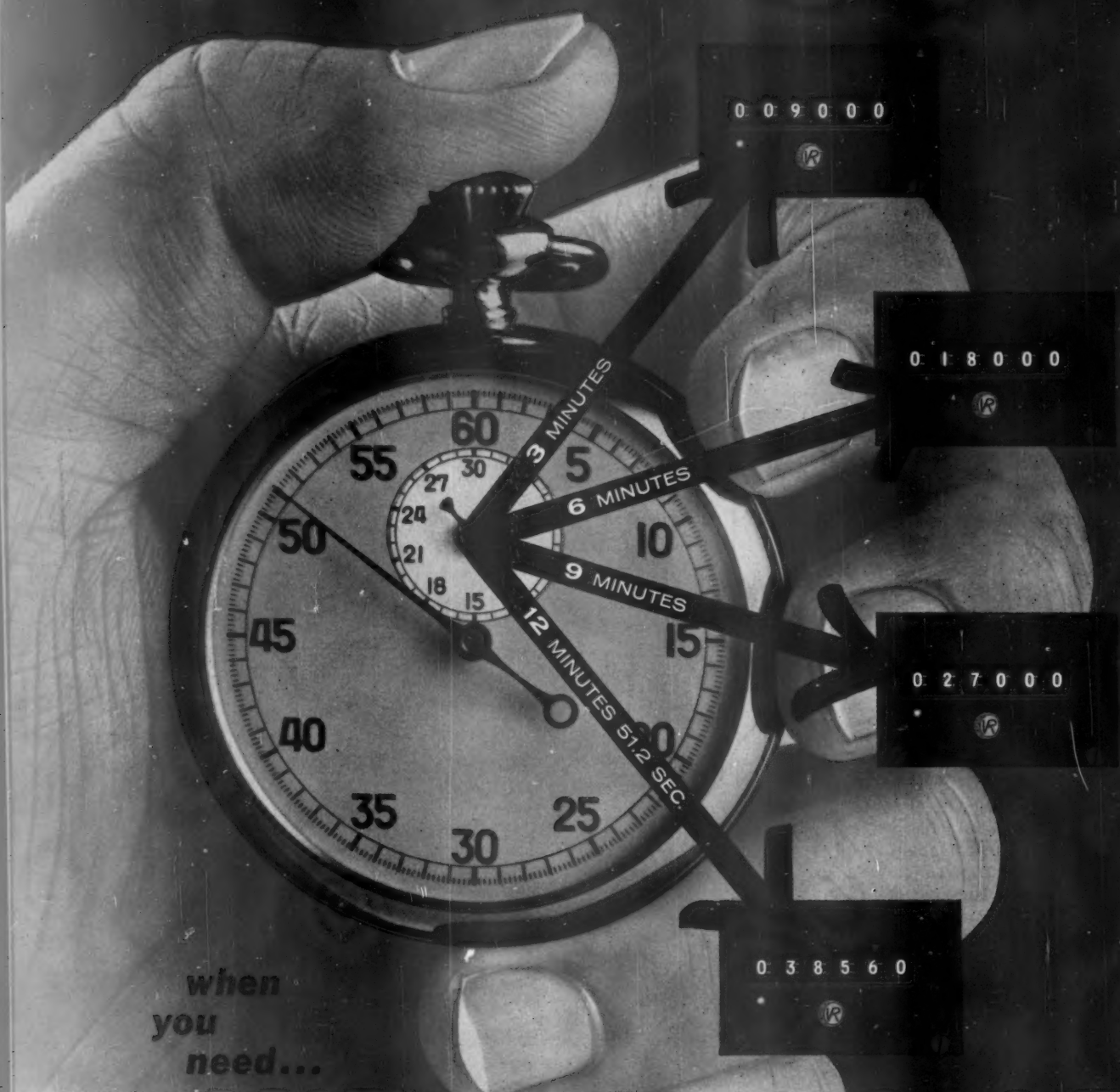
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COUNTING SPEED

Specify VEEDER-ROOT No. 1591 Quick Reset, High Speed Magnetic Counter



The No. 1591 resets to zero with the flick of a finger with manual reset, or in one second with electrical reset.

The No. 1591 is designed for accurate, dependable remote indication of machine operation, or for counting articles at high speed. Speed is 3000 counts per minute, 4 or 6 figures, manual or electrical reset, and made for panel mounting. Maximum panel area required is: 1.7" x 2.1" for four figures and 1.7" x 2.8" for six figures. The 1591 is available from stock.

Send for Veeder-Root Technical Information. Complete catalog data will be sent to you at once and application assistance is available from a Veeder-Root Counting Engineer if desired. Write or call today.

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Purchasing Follow-up

Car Production, Sales Decline in November

Production by the nation's automakers last month dropped to its lowest November level since World War II.

With General Motors operations closed for most of the month and Chrysler shutting down some operations because of steel shortages, carmakers turned out only 254,472 units. This was just about half the October output and compares with 514,152 cars built in November 1958.

Sales, on the other hand, were close to 375,000 units. While this was below October's 527,000 cars, it was still above the 369,400 automobiles sold in November 1958.

However, production this month is expected to rise sharply as more assembly lines return to operation. Ward's Automotive Reports predicts that the industry will boost its December assemblies 75% above the previous month.

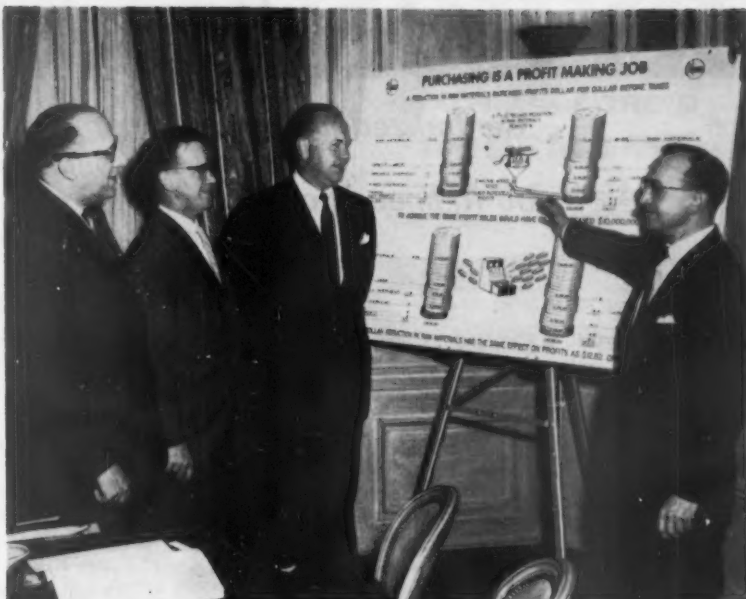
At that rate, total domestic car production this year will be about 5.5 million units, 30% above 1958's 4,244,000 cars. According to Ward's, 1959 production would have exceeded 6.2 million autos if steel shortages had not hampered operations.

N.A.P.A. Steel Group Reports Severe Shortage

Eighty-five percent of the members on the National Association of Purchasing Agent's steel committee report their plants curtailed operations this month because of steel shortages.

The latest report of the committee notes that "some purchasing agents are concerned because they cannot place new orders for delivery, with any degree of certainty, in February, March, and April 1960."

A. G. Ruediger, chairman of the committee, notes that P.A.'s are uncertain and unable to plan production schedules for the first quarter of 1960. The reason, he



The annual purchasing meeting of Rheem Manufacturing Co., held in New York, featured the theme "Purchasing is a Profit-Making Job." George J. Papas, vice president-purchasing (r.), was chairman.

says, is that they cannot get accurate information on future deliveries since the mills are operating only because of the 80-day Taft-Hartley injunction.

The report lists these steel products as the most difficult to obtain: wide plate, zinc-coated and cold-rolled sheets, light bar size angles, lightweight wide flange beams, structurals, and tin plate.

"There are many foreign and gray market offers," the committee notes. "Prices, however, are prohibitive and are running 50% to 200% above mill prices, depending on steel product." Some P.A.'s also report using conversion steel as a fill-in.

More Unemployment Coming?

The report concludes that "if labor votes to remain on strike January 7th and Washington does nothing about it, we can look for more unemployment in this country than anytime since the depression of the 1930's. This will be due to the fact that steel inventories

have dried up and enough will not be produced during the Taft-Hartley period to keep the metal working industry going."

Value Analysis Contest Established by Rheem

A value analysis contest for 1960 has been set up by Rheem Manufacturing Company to encourage contributions to the company's V.A. program.

The winning division and plant will be chosen on the basis of the greatest advancements in value analysis during the year. A monthly value analysis newsletter will publicize the program.

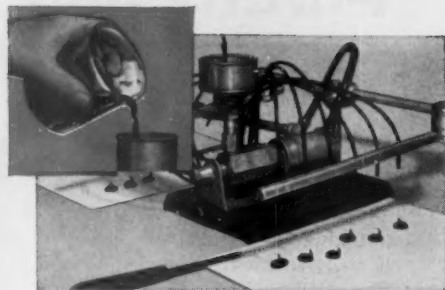
The contest was announced at the annual meeting of Rheem's corporate, division, and selected plant purchasing staffs held earlier this month in New York. Chairman of the conference was George J. Papas, vice president-purchasing.

Among the speakers who addressed the purchasing executives were A. Lightfoot Walker, presi-

Bertsch & Co. finds solution to lubrication problem...with Standard Oil's

RYKON Grease R

Centralized lube system pumps grease through 80 ft. lines in cold temperature; no clogging



Lab demonstration shows how RYKON Grease R works. Grease is poured into reservoir as a fluid. The shearing action exerted by pump and outlets irreversibly converts fluid to a grease. Grease is ejected from outlet lines.

Problem: Bertsch & Company, Cambridge City, Indiana, makes pinch rolls and other metal bending equipment. A centralized lubrication system used on one pinch roll model had to pump grease 80 feet. Greases tried could not be pumped this distance without clogging lines. Since machines are shipped all over the world and are often in operation in cold climates, Bertsch had additional problems. The grease had to be pumpable in cold temperatures. It had to be foolproof so that customers beyond the reach of service calls would experience no problems.

What was done: Bertsch turned to Standard Oil for help. Standard Oil man, D. M. Simmons had the answer:

RYKON Grease R. This is a rheopectic grease, one that flows like an oil. Its rheopectic properties cause it, under slight shearing stresses, to turn to a thick, durable grease. RYKON Grease R flows to the pump as a fluid, lubricates the bearings as a grease.

What you can do: Maybe you manufacture equipment that needs a centralized lubrication system and you have been looking for a grease like RYKON R. Get the facts about RYKON Grease R from your nearby Standard Oil lubrication specialist anywhere in the 15 Midwest and Rocky Mountain states. Or write **Standard Oil Company (Indiana), 910 South Michigan Ave., Chicago 80, Illinois.**



*You expect more from **STANDARD** and you get it!*

Sons of founder, Harry E. and Robert O. Bertsch talk with Standard Oil lubrication specialist Donald M. Simmons. Don is well qualified to work with customers on difficult lubrication problems. He has the training and experience for it. Don graduated from Purdue. He has seven years service with Standard. He has completed the Standard Oil Sales Engineering School.



Purchasing Follow-up

dent, who discussed the company's growth and acquisition program; C. V. Coons, executive vice president, who spoke about 1959 results and 1960 prospects; G. W. Mallatratt, vice president and treasurer; E. S. Ronk, vice president; and Andrew W. Hughes, comptroller.

New Costing Guide

Purchasing head, Papas introduced a new costing guide, designed to provide an organized method of estimating and analyzing costs. Its functions, he said, are 1) to check price quotations made in answer to an inquiry and 2) to help obtain reductions through value analysis.

Topics discussed during the two-day meeting included improved purchasing controls, the steel supply situation, the internal auditors' role in purchasing controls, labor-management relations in 1960, research and development, trade relations, new product lines, inventory management, and new developments in traffic. A chart was posted during the sessions showing that every dollar reduction in raw material costs had the same effect on profits as additional sales of \$12.82.

Record 1st Half Boom Forecast by Economist



"A boom in the first half of 1960 will be followed by a slight dip in the second," George Hitchings tells the Carolinas-Virginia association.

A record boom in the first half and then a slight economic dip in the last six months. That's the way George Hitchings, manager,

Economic Analysis Dept., Ford Motor Co., sized up the 1960 economic outlook in a recent talk at the Carolinas-Virginia Purchasing Agents Assn. meeting at Pinehurst, N.C.

Mr. Hitchings said that if steel production is not interrupted again Gross National Product will probably exceed a \$500 billion-per-year-rate, in the first half. (Previous GNP peak was \$484.25 billion in second quarter '59.) The main force in this business surge stems from efforts by steel consumers to rebuild stocks as quickly as possible.

"Maintenance of such a high rate of inventory buildup throughout the second half is unlikely," Mr. Hitchings declared. "For this reason the economy is likely to show little, if any, further real growth in the second half. A moderate rise in dollar volumes could occur because of price increases."

Here's What's Ahead

Analyzing some of the more important elements of Gross National Product, Mr. Hitchings sees these as the major trends in 1960:

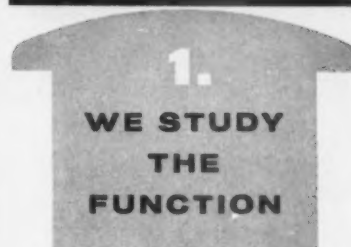
Government Spending: Federal spending will remain constant while state and local government outlays will continue to rise. Increased expenditures at the local level will serve as a stimulant to the economy, but the beneficial effect will be largely offset by higher taxes.

Exports-Imports: Both will rise in 1960 with our exports gaining a little more.

New Plant and Equipment Spending: Currently in the recovery phase, this trend will continue through 1960. This is one area of economic strength that will help buoy the economy during the second half when inventory building by manufacturers slows down.

Residential Construction: It's been going down since the end of '58, will continue to slump in '60. Outlook is for 1.2 million housing starts next year compared with this year's estimated 1.35 million. (Turn Page)

TUBULAR RIVET COST-SAVINGS MULTIPLY WITH MILFORD'S ASSEMBLY ANALYSIS



Smart purchasing executives know there's more to buying rivets these days than just comparing prices. Milford coordinates design and assembly for the lowest possible product cost.

For the answers to assembly problems... get in touch with Milford first!



MILFORD, CONNECTICUT • HATBORO, PENNA.
ELYRIA, OHIO • AURORA, ILL. • NORWALK, CALIF.

For More Information Write No. 171
on Inquiry Card—Page 32



how much obsolescence in your stock room?

Take a close look at your wheel inventory. How much stock are you carrying in special sizes and gradings? Then ask yourself what will happen to these "specials" if the grinding applications change as they frequently do. In most cases, they're stored... to collect dust and use up valuable storage space. This is an unnecessary waste and a sure way to eat up your profits.

Wheel obsolescence can be lessened considerably with Carborundum's new line

of NATIONAL STANDARDS. This basic line enables you to get maximum and universal usage from each wheel—regardless of the grinding application. Review your inventory today and sharpen your profit margin tomorrow... with NATIONAL STANDARDS by Carborundum.

For a quick solution to your conversion from costly "specials" to practical "standards", call your local Carborundum distributor. On your next order...

Specify "Job-Engineered" NATIONAL STANDARDS by

CARBORUNDUM®



WRITE FOR YOUR CATALOG OF NATIONAL STANDARDS, Form A-1489 and prove to yourself how "Standards" can solve many of your abrasive problems. Send your request to The Carborundum Company, Dept. P 81-921, Niagara Falls, N. Y.

For More Information Write No. 172 on Inquiry Card—Page 32

R 81-921

Purchasing Follow-up

Autos: 1960 will be a good year (7 million cars, including imports). By January, the auto industry—if it can get the steel, may be turning 160,000 cars per week in an effort to build up dealers' inventories.

Strike Creates Instability

Mr. Hitchings scored those who say that the economy has benefited from the steel strike. "The appearance that we have gained is only an illusion," Mr. Hitchings exclaimed. "The illusion stems from the rapid buildup of inventories before and after the strike. Actually, a strike of this duration has made for greater instability in the total economy. The excessive portion of the buildup will be concentrated in the first half of 1960, rather than distributed over the full year. A moderate, steady upturn in the economy is far preferable to the alternate highs and lows produced by such a strike."

New Standards for Tags

A set of standards for buying tags has been announced by the Tag Manufacturers Institute, an association of tag specialists.

Called the PURCHASE rule, these standards include rigid requirements of production, service, reliability, and economy. They are:

- 1) Preparation of a tag program
- 2) Use of the tag
- 3) Reliability of the tag manufacturer
- 4) Convenience of contact
- 5) Help from the tag manufacturer
- 6) Appearance of the product
- 7) Selection of tag size and stock

- 8) Economy of bulk purchase

The institute has also prepared a checklist of eight manufacturer qualifications for all purchasing agents. In addition, a more detailed Manual of Standard Specifications is available for \$5 from the Tag Manufacturers Institute, 145 East 32nd St., New York 16, N.Y.

Interested in
"cutting" time?

... Then get a
RIGGID
for faster, cleaner cuts
on every job!

For General Use buy
**RIGGID Heavy-Duty
Pipe Cutters**

Factory tested for perfect tracking, here's your best cutter buy for hand use. Extra-long shank protects threads, gives fast, easy adjustment. Large handle for sure grip . . . more leverage. Strong, special malleable frame won't bend or warp. You'll also need the **RIGGID** Wide-Roll Cutter, that tracks perfectly at high power-drive speeds, and the **RIGGID** 4-Wheel Cutters, that give quick, clean cuts in tight places with only quarter turns.

For Tubing and
Thin-Wall Conduit
buy **RIGGID**
Tubing Cutters

Exclusive fold-in reamer on Nos. 10, 15 and 20 protects hands and pockets . . . reams full cutter capacity. Single thin-blade wheel gives quick, clean cuts. Rollers smooth tubing ready for soldering.
Only special No. 315 is 3-wheel cutter for fast cuts in hard-to-get-at places.

There's a **RIGGID** Cutter to save you time on every job. Call your Supply House today!

Five Sizes
for 1/8" to 6"

Five Sizes
for 1/8" to 4"

RIGGID
The Ridge Tool Company, Elyria, Ohio, U.S.A.

IT PAYS TO STANDARDIZE ON STANSCREW



Stanscrew service helps insure precision of *Gilbarco* pumps

Gilbert & Barker Mfg. Company builds its famous Gilbarco gasoline pumps for oil companies large and small, and ships them to every state in the union as well as to most countries overseas. To insure precision and dependability of these pumps, great care must be taken in all assembly operations. Fasteners, for instance, must be torqued precisely to keep all components in perfect alignment.

Because of the critical importance of fasteners to its products, Gilbarco has selected Stanscrew heat-treated cap screws for such key applications as the positive displacement meter (shown in the insert). Stanscrew fastener specialists were happy to assist Gilbarco engineers in de-

termining the right fastener with the correct torque to assure trouble-free service.

Gilbert & Barker is one of a long roster of honored names in American industry who have found it pays to standardize on Stanscrew. A product of unsurpassed quality . . . a broad selection of more than 5,500 different fasteners . . . prompt service through local distributors, backed by complete stocks at three conveniently located plants . . . these are a few of the reasons Stanscrew means greater value in fasteners.

Stanscrew's experienced fastener specialists can often suggest ways to improve your assembly procedures. Your local Stanscrew distributor will be happy to arrange a prompt visit. Call him today.



FASTENERS

CHICAGO | THE CHICAGO SCREW COMPANY, BELLWOOD, ILLINOIS

HMS | HARTFORD MACHINE SCREW COMPANY, HARTFORD, CONNECTICUT

WESTERN | THE WESTERN AUTOMATIC MACHINE SCREW COMPANY, ELYRIA, OHIO

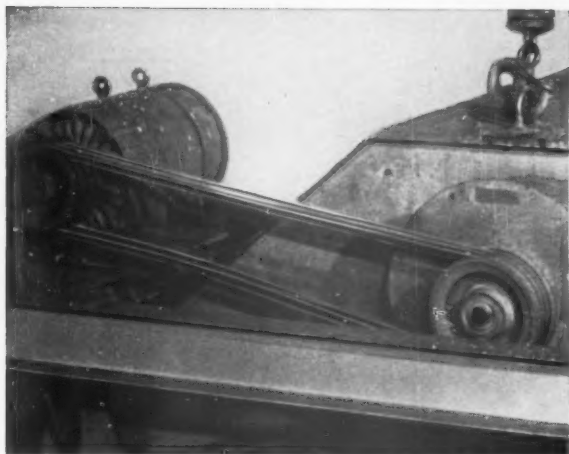
STANDARD SCREW COMPANY 2701 Washington Boulevard, Bellwood, Illinois

For More Information Write No. 174 on Inquiry Card—Page 32

Get these 3 advantages
with V-belts reinforced with

DACRON®

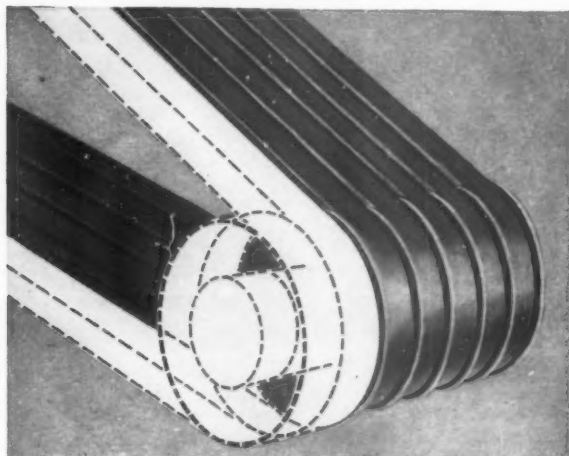
POLYESTER FIBER



1. EXTRA-LONG SERVICE LIFE. V-belts made with "Dacron" kept this car shakeout on the job three full years without a belt change—52 times longer than with previously used conventional belts! Evidence of the remarkable ability of these belts to withstand shock loads and constant flexing.



2. REDUCE EXPENSIVE INVENTORIES. V-belts reinforced with "Dacron" have outstanding dimensional stability. They won't shrink or stretch in storage . . . assure quick, positive matching for fast installation . . . eliminate costly downtime for adjustments.



3. 5 BELTS DO THE WORK OF 7. The extra strength of V-belts reinforced with "Dacron" allows the use of fewer belts and sheaves . . . permits up to 40% more horsepower per drive unit, without an increase in the number or size of sheaves.

Savings of as much as 10% per drive unit are possible when you use V-belts reinforced with Du Pont "Dacron"® polyester fiber. The strength, stability and extra life of these belts combine to bring down drive costs . . . through less downtime and smaller inventories . . . fewer belts and sheaves . . . lower maintenance and fewer replacements.

For the next drive you design or install, be sure you specify V-belts reinforced with Du Pont "Dacron". Du Pont makes the "Dacron" fiber used by belt manufacturers in producing their finest-quality V-belts.

SEND FOR FREE BOOKLET: "Du Pont 'Dacron' Sets New Standards for V-Belt Performance". For your copy, fill out and mail coupon below.

*"Dacron" is Du Pont's registered trademark for its polyester fiber.

E. I. du Pont de Nemours & Co. (Inc.)
Textile Fibers Department
5518-(C) Nemours Bldg.
Wilmington 98, Delaware

Name _____ Title _____

Firm _____

Address _____

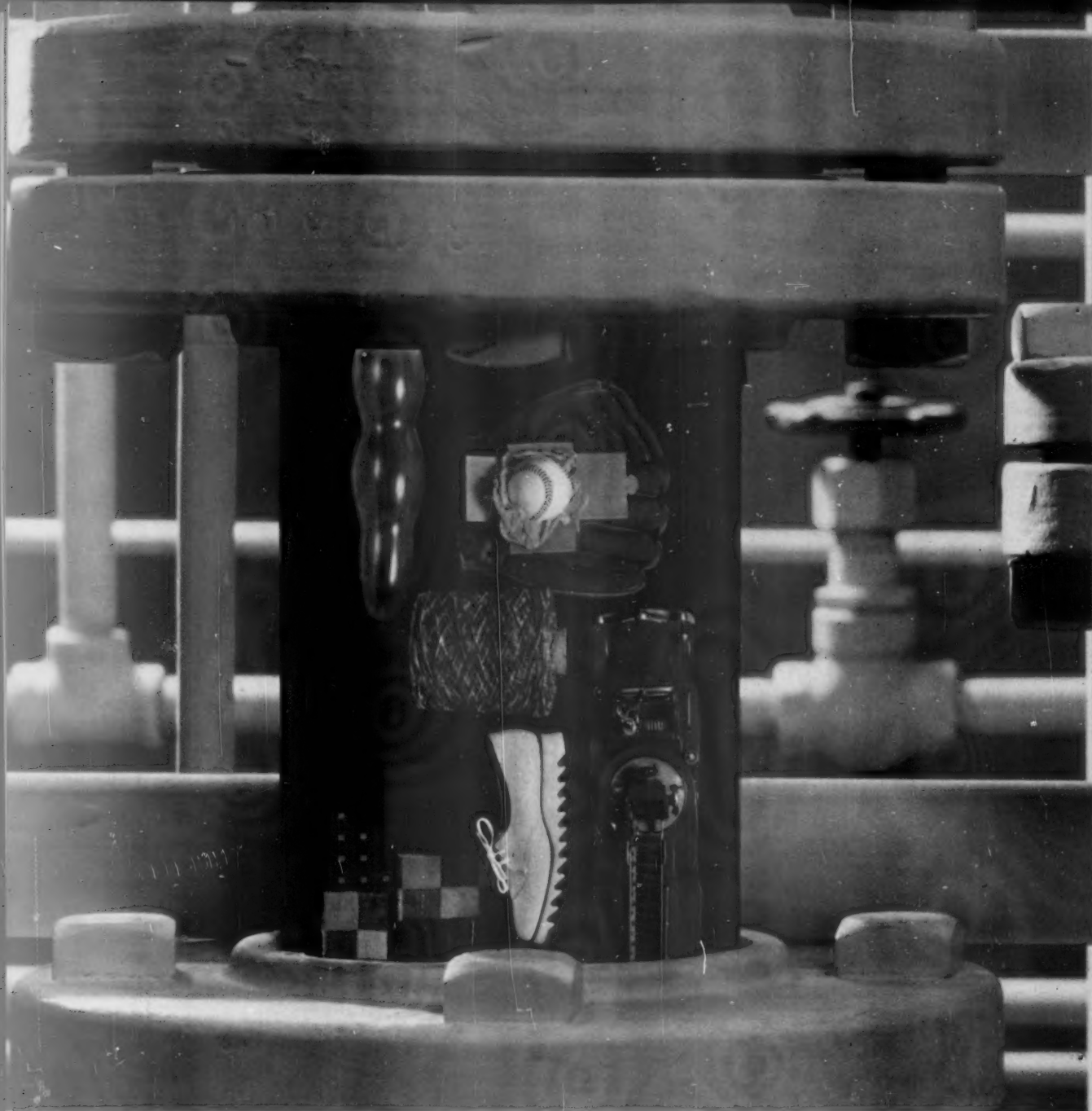
City _____ State _____



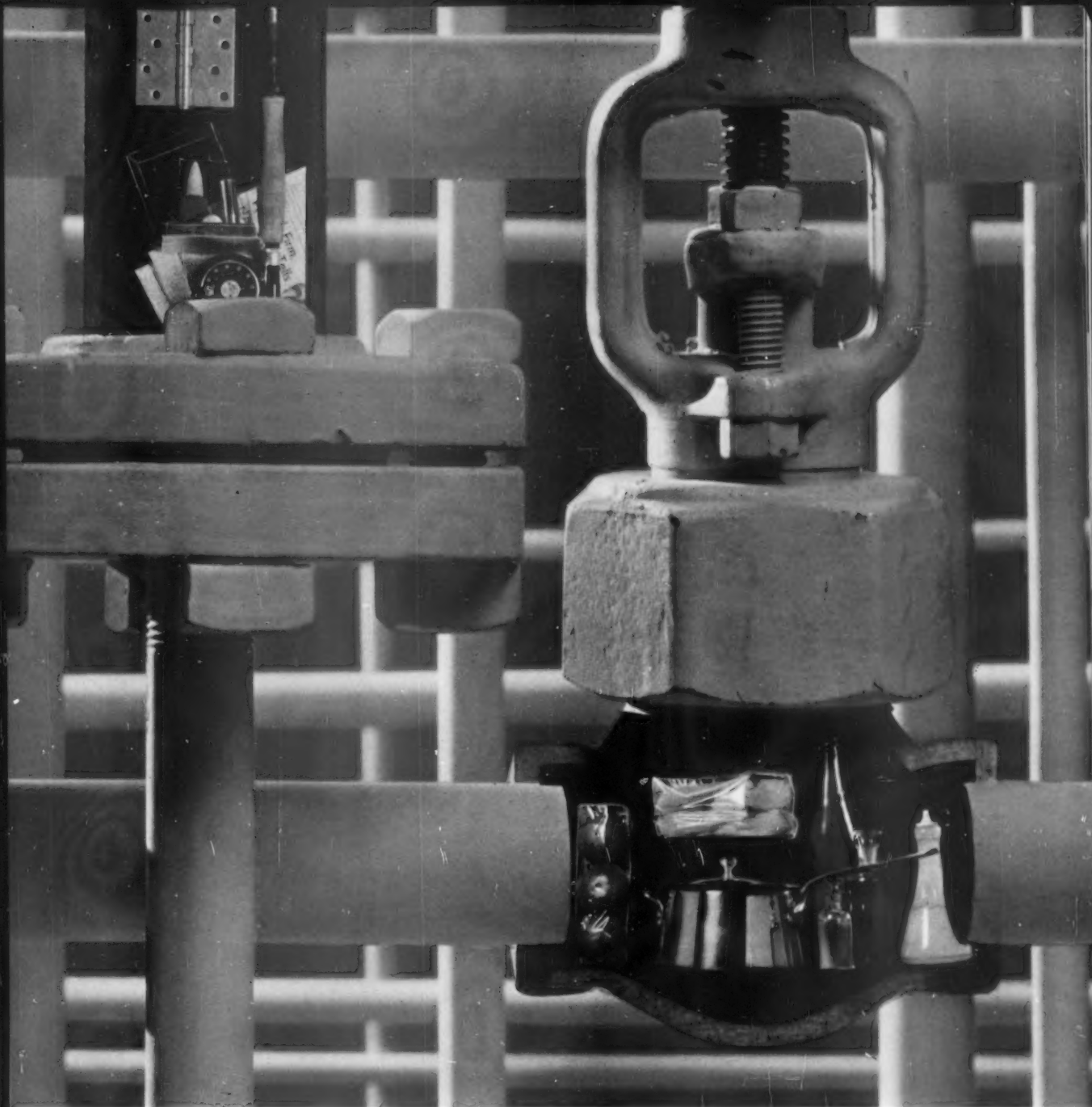
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY
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DECEMBER 21, 1959

For More Information about ad on following
page Write No. 176 on Inquiry Card—pg. 32→



FOR HELPFUL IDEAS ON THE CHEMICALS
THAT GO INTO YOUR PRODUCTS,
YOU'LL LIKE DOING BUSINESS WITH
COLUMBIA-SOUTHERN



You can count on smooth production when you use Columbia-Southern chemicals, because they'll be delivered to you on time, in the grades and quantities ordered. You'll find the quality consistently high, too.

But you get far more than prompt delivery and consistent quality when you work with Columbia-Southern. You can call on Columbia-Southern's solid experience in chlorine, alkalies, and related chemicals to help you improve the efficiency of your processing activities. Your Columbia-Southern Representative will give you sound,

profit-building advice on such vital matters as forms and grades, transportation economics, storage methods, safety precautions, and applications.

Why not start with a general survey of your current purchases? Call in your local Columbia-Southern Representative and let him work with you in evaluating every step. You'll be glad you did.

Columbia-Southern Chemical Corporation, One Gateway Center, Pittsburgh 22, Pa. Offices in fourteen principal cities. In Canada: Standard Chemical Limited.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

A Subsidiary of Pittsburgh Plate Glass Company

Chlorine • Caustic Soda • Caustic Potash • Soda Ash • Sodium Bicarbonate • Solvents • Ammonia
Chromium Chemicals • Barium Chemicals • Sulfur Chemicals • Agricultural Chemicals • Reinforcing Pigments
Calcium Chloride • Muriatic Acid • Calcium Hypochlorite • Hydrogen Peroxide • Titanium Tetrachloride



299 - H. H. Scott 40 Watt Stereo Amplifier



**Thomson Rivets and Rivet-Setting Machines used by
H. H. Scott to standardize fastening procedures.**

Any high fidelity hobbyist will tell you that H. H. Scott, Inc., Maynard, Mass., makes America's top quality in high fidelity equipment.

Here you see one of the finest stereo amplifiers made . . . in both chassis and final form. Components are securely and accurately held in uniform tension by 113 Thomson Rivets. H. H. Scott has standardized on Thomson aluminum rivets in one diameter and four lengths.

Rivets get their uniform clinch from any one of the eight Thomson Automatic-Feed Rivet-Setting Machines which H. H. Scott now uses.


All eight machines have identical tooling except for interchangeable anvils. Several sets of numbered, color-coded anvils cover all variations in assembly thickness. Change-over time is a matter of seconds.

E. G. Dyett, Jr., Purchasing Agent of H. H. Scott, reports, "The use of Thomson rivets and rivet-setting machines has produced assembly economies and resulted in lower over-all costs, while improving product appearance and mechanical construction."

Chances are the Thomson Fastening Man can help you improve product quality and reduce your costs. It costs nothing to find out. Make a date with him soon. You'll find him listed in the yellow pages of your phone book. In the meantime, you'll want Thomson's latest catalog. Write today for your free copy to Dept. P

Style 161
Thomson Automatic
Rivet-Setting Machine





JUDSON L.

THOMSON

MFG. CO., WALTHAM 54, MASS.

Rivets and Rivet-Setting Machines

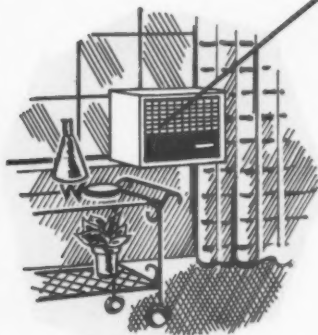
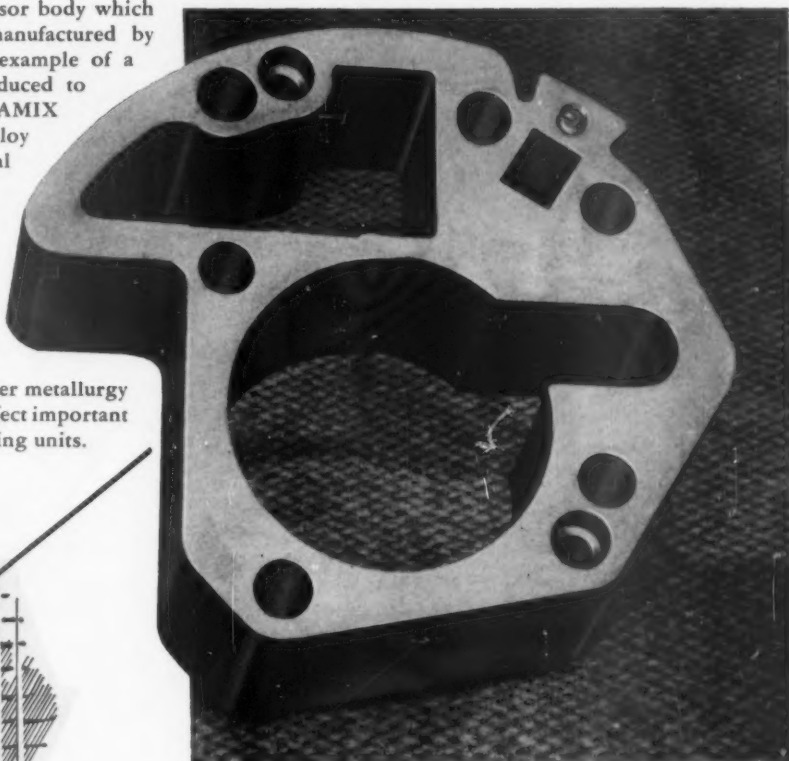
Offices: NEW YORK • ILLINOIS • INDIANA • OHIO • MICH. • PENN. • CALIF. • FLORIDA • TEXAS • S. CAROLINA • MO. • ONTARIO, CANADA.

For More Information Write No. 177 on Inquiry Card—Page 32

GRAMIX[®] COMPRESSOR BODY IS VITAL PART IN GENERAL ELECTRIC AIR CONDITIONER . . . this GRAMIX part is a

new concept in powder metallurgy techniques . . . engineered to meet requirements of GENERAL ELECTRIC's new compressor design

This large, complex shaped compressor body which is employed in air conditioners manufactured by General Electric is an outstanding example of a GRAMIX part engineered and produced to exacting specifications. As in all GRAMIX products of powder metallurgy, the alloy was created to meet exacting physical properties required in this particular application. Correct briquetting, controlled sintering procedures, precise finishing operations and rigid quality control throughout the manufacturing process assures General Electric uniform, dependable GRAMIX parts. The production of this body as a product of powder metallurgy has also enabled General Electric to effect important design changes in their air conditioning units.



This part is shown full size. Actual weight: 2¼ lbs.

Write today for these helpful engineering manuals. Engineering Bulletin No. 18 covers design and metallurgical requirements and alloy selection of GRAMIX bearings. No. 19 contains facts about GRAMIX Machine Parts and No. 21 contains general information on GRAMIX products from Powder Metallurgy. Get your copies now.



X-274-1

THE UNITED STATES GRAPHITE COMPANY
DIVISION OF THE WICKES CORPORATION, SAGINAW 15, MICHIGAN
GRAPHITAR[®] CARBON-GRAPHITE • GRAMIX[®] POWDER METALLURGY • MEXICAN[®] GRAPHITE PRODUCTS • USG[®] BRUSHES

DECEMBER 21, 1959

For More Information Write No. 178 on Inquiry Card—Page 32

37

ANOTHER IN A SERIES
OF MOTOR FACTS
FROM ALL INDUSTRIES



"Roughest duty we have ever seen motors endure"

reports Marquette Iron Mining Co.
of the Westinghouse ***Life-Line A*** motors
in its Eagle Mills Pelletizing Plant

Operating continuously, 24 hours per day, dependable Westinghouse Life-Line® "A" motors drive a network of fans and conveyors at the Eagle Mills Pelletizing Plant of Marquette Iron Mining Co., Ishpeming, Michigan.

Some of these motors are located directly above a sintering machine where ambient temperatures often exceed 200° F and the motor is subjected to deposits of finely divided iron ore. Under these conditions, not a single motor breakdown or failure has occurred during 11 months of service.

Says Mr. Ed Gagnon, plant electrician, "Our Westinghouse motors have given us complete reliability on the roughest tests we have ever seen a motor endure."

For specific information about the ways your operation can benefit from the improved performance, longer life and reduced maintenance offered by the dependable Life-Line "A," contact your nearby Westinghouse sales engineer. Or write to Westinghouse Electric Corporation, P.O. Box 868, 3 Gateway Center, Pittsburgh 30, Pennsylvania.

J-22077

YOU CAN BE **SURE**...IF IT'S
Westinghouse



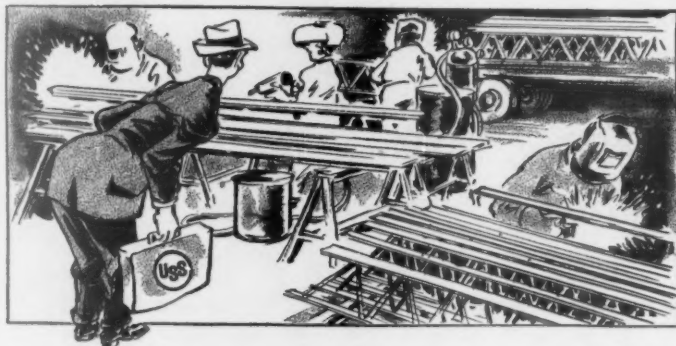
Deposits of powdered iron ore are no problem to this 2-hp Life-Line "A" motor driving conveyor which carries powdered iron ore to the balling disc where $\frac{1}{2}$ " pellets are formed. Presealed, prelubricated Life-Line "A" bearings keep dirt and other material out.

You get steel + plus from U. S. Steel

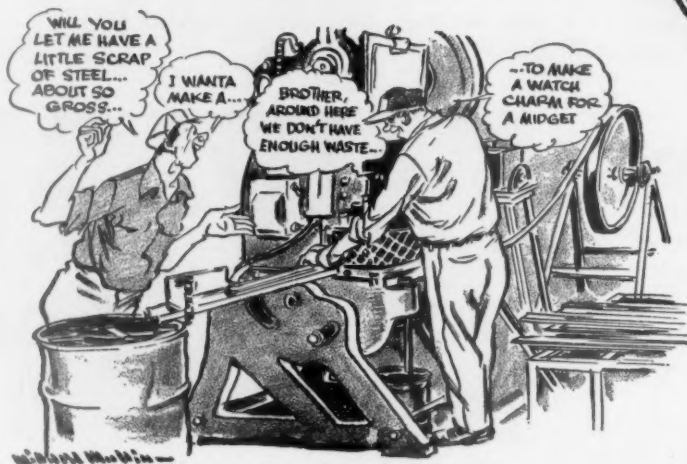
"We recommended a change in steel and processing that saves them \$6,000 a year,"

SAYS SPENCE WILLIAMS
TCI SALES REPRESENTATIVE, COLUMBIA, S. C.

"Our customer, the Owen Joist Company, Cayce, South Carolina, previously bought steel strip in coils to make channels for bridging their bar joists.



"After taking a hard look at their operation not long ago, we suggested they switch to hot rolled sheet in coils and have it slit by an outside processor. This saved them almost \$5,000 a year. To make the anchors for their bar joists, we recommended they buy a different type of H. R. Steel . . . and in coils rather than cut-to-length strip. The coils could then be cut to required size by a steel processor. This method practically eliminated scrap loss and saved the company an additional \$1,000 a year."



Alert sales assistance like this is profitable for both consumer and supplier. And technical sales assistance in the selection and most efficient use of steel is only one of the many U. S. Steel Plus services that mean more profit to you.

When you buy from U. S. Steel, you get steel plus technical assistance . . . research . . . facilities . . . marketing assistance

United States Steel Corporation—Pittsburgh
American Steel & Wire—Cleveland
National Tube—Pittsburgh
Columbia-Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Supply—Steel Service Centers
United States Steel Export Company



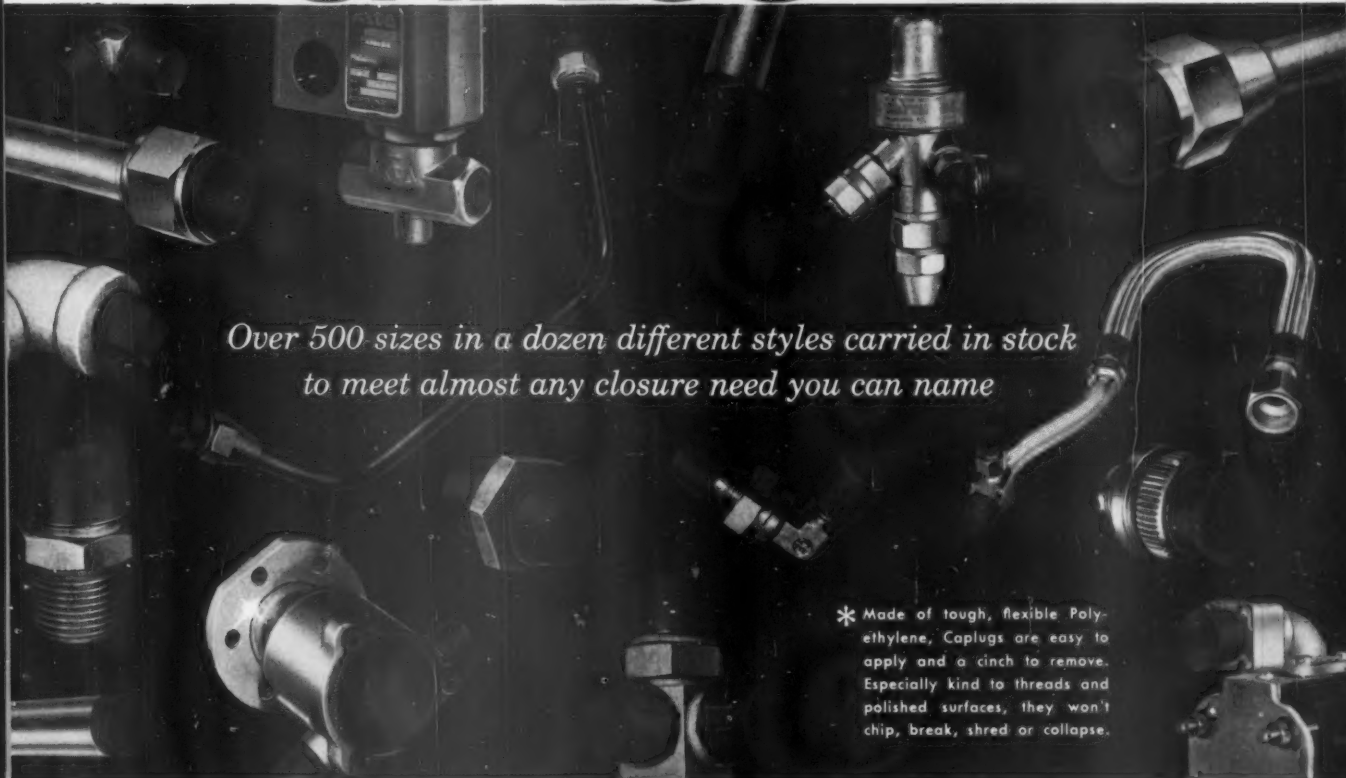
United States Steel

For More Information about ad on facing page
Write No. 180 on Inquiry Card—page 32→
PURCHASING



to protect tubing, threaded or machined parts in process, storage and transit

THERE'S NO BETTER WAY THAN THE CAPPLUG* WAY



*Over 500 sizes in a dozen different styles carried in stock
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* Made of tough, flexible Polyethylene, Caplugs are easy to apply and a cinch to remove. Especially kind to threads and polished surfaces, they won't chip, break, shred or collapse.

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*Mail a free assortment of Caplugs, literature and prices to us,
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VALUE ANALYSIS IN ACTION

Plantwide survey by Bay State's Don Chisholm boosts grinding

It all started with a torque tube bearing for one of the top priority missile guidance systems. Two kinds of trouble had developed during the manufacturing process and engineers at the Split Ballbearing Division of Miniature Precision Bearings, Inc., Lebanon, N. H., were in a hurry to get both of them straightened out.

First, in bore-grinding the inner race, about .010" of stock had to be removed, but the tolerance specified was a microscopic $\pm .0001$ and an eight microinch finish was mandatory. The bore-grinding wheel used wasn't up to requirements and the reject rate was excessive.

Second, in lapping the faces of both races, the wheels used were not producing the required five microinch finish, there was an imbalance between the amount of stock removed from the upper and lower surfaces . . . and, on top of that, the wheels themselves broke down

too rapidly.

Bay State was called in and Abrasive Specialist Don Chisholm attacked the problem, working closely with Distributor Harold Domingue, Abrasives & Tools, Inc., Auburn, Mass. They not only cured both troubles and brought production up to the standards required . . . the people at Split Ballbearing were so delighted they asked Chisholm and Domingue to make a survey of every grinding operation in the plant. This led to fourteen other carefully considered recommendations.

Like Hal Domingue and Don Chisholm, the Bay State people in your area are trained specialists. They know what Value Analysis means and they know it takes experience, imagination and plain hard work to turn Value Analysis into cost-cutting specifications. *Better grinding at lower cost — that is their business.*



Skill and experience play a vital part in maintaining the ultra-precise standards demanded by Split Ballbearing customers. Here, the company's senior machine operator, Emory Malloch, loads the fixture plate in the big production lapping machine with torque tube races.

Examining the precisely lapped finish on a pair of bearing races are Frank Orth (left), Chief Industrial Engineer at Split Ballbearing, and George R. Morin, Factory Manager.

(Advertisement)

efficiency at Split Ballbearing



Don Chisholm has built a formidable reputation for solving tricky abrasive problems. Prior to joining Bay State as an abrasive specialist, he spent 17 years as Abrasive & Tool Coordinator at General Electric's turbo-super-charger and jet engine plants where his experience was extremely varied since he had to use abrasives on unusual alloys as well as the general run of industrial metals.

BAY STATE ABRASIVES



Bay State Abrasive Products Co., Westboro, Massachusetts.

In Canada: Bay State Abrasive Products Co., (Canada) Ltd., Brantford, Ontario.

Branch Offices: Bristol, Conn., Chicago, Cleveland, Detroit, Pittsburgh, Los Angeles. *Distributors:* All principal cities.

Information For Your Catalog Files

BLOWERS

An 18-page catalog on rotary positive blowers, gas pumps, and vacuum pumps. Bulletin 565C contains photographs, drawings, and tables.

Fuller Company

Write No. 1 on Inquiry Card—Page 32

CIRCUIT BREAKERS

Publication GEA-6759 has information on low impedance—rated five through 75 amperes—ALB-1C circuit breakers. The two-page color bulletin contains descriptive, dimensional, and ordering data.

General Electric Company

Write No. 2 on Inquiry Card—Page 32

DISC GRINDING WHEELS

A four-page color brochure on disc grinding wheels. Describes the desired characteristics of disc wheels and provides performance records on various disc grinding operations. Contains photographs and application recommendations.

Macklin Company

Write No. 3 on Inquiry Card—Page 32

FLUID POWER EQUIPMENT

Bulletin 10051-H gives specifications, illustrations, references, and descriptive material on fluid power equipment. Includes a listing of all accessories available.

Oilgear Company

Write No. 4 on Inquiry Card—Page 32

HINGES

A listing of over 1900 standard and semi-standard continuous hinges. The catalog is illustrated with detailed dimensions.

Rex Hinge Company

Write No. 5 on Inquiry Card—Page 32

HOSE FITTINGS

Bulletin 4406B1 covers industrial hoses and hose fittings. The four-page folder illustrates five types of reusable fittings in a variety of ends. Also includes hose fitting adapters and hose assembling equipment.

Parker-Hannifin Corporation

Write No. 6 on Inquiry Card—Page 32

INDUSTRIAL CONTROLS

A catalog on industrial controls, as well as counters, actuators, and switches. Other items illustrated and described are industrial actuators, combustion instrument controls, and controller and pressure indicators.

General Controls Co.

Write No. 7 on Inquiry Card—Page 32

LATHES

Bulletin 211 describes Model HXB 26/45 lathes. The 10-page booklet gives features and specifications of the design.

Nebel Machine Tool Corporation

Write No. 8 on Inquiry Card—Page 32

MOTORS

Bulletin 208A describes standard and special torque motors. The four-page catalog covers both AC and DC fractional horsepower types. Illustrated with application photographs, keyed drawings, and comparative speed-torque charts. Also includes torque motor characteristics, typical applications, duty specifications, sizes, and ratings.

Howell Electric Motors Company

Write No. 9 on Inquiry Card—Page 32

SEALS AND FASTENERS

Catalog No. 359A illustrates and describes high-pressure, vibration resistant seals and fasteners. The 16-page bulletin gives tabular data, military and commercial specifications, descriptive information, and engineering drawings. Has an index and a listing of local engineering representatives and distributors.

A.P.M. Corporation

Write No. 10 on Inquiry Card—Page 32

SNAGGING WHEELS

Catalog PG-356 describes features of snagging wheels for swing frame, floor stand, and portable grinding. Includes a section on grinding operation costs. Has a table of starting grades for rough grading operations.

Cincinnati Milling Machine Co.

Write No. 11 on Inquiry Card—Page 32


STEEL

A pocket-size 20-page guide listing compositions of the 40 stainless steels, 184 alloy steels, and 105 carbon steels most often used in industry. Contains important federal specifications with corresponding SAE, AISI, and AMS numbers.

Jones & Laughlin Corporation

Write No. 12 on Inquiry Card—Page 32


For More Information about ad on facing page Write No. 182 on Inquiry Card—pg. 32→
PURCHASING



*Your
steel service
center's
inventories*

*look
like
this*

Photos courtesy of The Universal Steel Company



*... so
your
inventories
can look like this!*

To cut inventory costs, make your Youngstown Warehouser your local "steel service center". Make full use of his complete local stocks, fast delivery service. His one-source service simplifies your purchasing and bookkeeping, too. You'll find him an efficient, time-saving, partner-in-production.



THE
YOUNGSTOWN
SHEET AND TUBE COMPANY

Youngstown, Ohio

Manufacturers of Carbon, Alloy and Tool Steel

ROBERT "BOB" LARSON,
Lenox Band Saw Superintendent,
over 50 years service.



PRECISION SAWING WITH THE INCOMPARABLE LENOX BAND SAW BLADES

Incomparable, yes. Advanced heat treating . . . machining . . . and setting methods (developed by LENOX engineers) . . . these are the basic reasons for the outstanding cutting qualities of LENOX band saw blades.

Flame-hardened teeth retain their sharp edges, even when cutting extra-tough material. LENOX bands can be used on all types of machines for contour sawing and cut-off work.

CUTTING PROBLEM? Why not let the extensive research facilities and experience of American Saw Company help with your particular cutting application. This service may save time — and money for you. And there's no obligation, of course.



Available
in
welded
bands.
and
100 ft.
coils.

LENOX
THE TOOLS OF THE TRADE BOX

AMERICAN SAW & MFG. COMPANY
SPRINGFIELD, MASSACHUSETTS • U.S.A.
For More Information Write No. 183 on Inquiry Card—Page 32

Catalog Files

TEST GAUGES

Bulletin M28A describes precision test gauges. Includes accuracy and sensitivity specifications, models available, and mounting dimensions and drawings. Includes a full size reproduction indicating dial graduations.

Martin-Decker Corporation

Write No. 13 on Inquiry Card—Page 32

TUBING AND PIPE

A six-page bulletin on tubing and pipe made of Hastelloy Alloys B and C. Outlines applications and describes resistance to corrosive fluids. Includes a number of tables.

Carpenter Steel Company

Write No. 14 on Inquiry Card—Page 32

VARIABLE SPEED BELTS

Catalog VSB-1 is a selection guide for variable speed belts. The 32-page bulletin provides ratings, sizes, and engineering data. Also has listings of applications and manufacturers' part numbers and cross-reference tables.

Maurey Manufacturing Corporation

Write No. 15 on Inquiry Card—Page 32

WINCHES

A catalog describing hand and power winches, both spur and worm gear models. Covers winches with capacities up to 5000 pounds.

Thern Machine Company

Write No. 16 on Inquiry Card—Page 32

WRENCHES

Catalog 62 includes a simplified method for figuring correct wrench size for any bolt or nut diameter. Full specifications and details are given for standard and special application wrenches.

Lowell Wrench Co.

Write No. 17 on Inquiry Card—Page 32
For More Information about ad on facing
page Write No. 184 on Inquiry Card—pg. 32→
PURCHASING



Prize winner! This outboard motor container was one of our ten award-winning designs at the Fifth Annual Fibre Box Competition.

Outboard motor makes its maiden voyage in this new container by International Paper



Packing an outboard motor is a tough, complex job.

At least it *was*—until International Paper created this corrugated container for Mercury outboard motors.

The inner packing is made of pre-assembled die-cut sheets. The motor fits snugly in place. It's cradled and cushioned in shipment. Judges at the Fifth Annual Fibre Box Competition gave it a Silver Award.

The same design and manufacturing in-

genuity goes into every International Paper shipping container. And every container gives you these 7 *extra* values:

1. **First-class engineering.** Truly creative packaging by the same team that originated the tube-and-cap design, now standard in the industry, and many others.
2. **Time-proved boxmaking skill:** several hundred million containers annually.
3. **Built-in savings.** Maximum strength, least weight, best cost-saving design.

4. **Convenient delivery:** 19 strategically located box plants. (Plants 20 and 21 are now under construction.)

5. **Virgin fibre Gator-Hide® kraft** for greatest strength, smooth surface, uniform color.

6. **Fair prices** in line with top quality.

7. **A dependable source of supply.** The *only* containers backed by the full resources of International Paper.

See your Container Division packaging expert. He's a good man to know.

*if cost reduction
is your problem*

value analysis

dictates

NATIONAL HTM CASTINGS



To make or buy — to cast,
forge or fabricate — that
is often the question.

Before you decide, look into the
advantages of National HTM
(pearlitic malleable) castings
over other methods of forming.

Among the great advantages of
National HTM castings are
closer as-cast tolerances that often
eliminate machining operations
... excellent response to subsequent
hardening operations, either
induction or flame ... easy
machinability on your present
equipment ... high ultimate
strength ... excellent non-seizing
bearing qualities ... air or liquid
quenching ... ability to be
smooth-finished.

Yes, Value Analysis often
makes the use of *National HTM
castings a must*. And remember
National HTM castings can be
precision cast by the shell mold,
CO₂ or green sand methods.
Production costs tumble ...
performance and salability of
your product spurt — with
National HTM (pearlitic
malleable) castings.

AA-9358

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY
Established 1868 Cleveland 6, Ohio

The nation's largest independent producer of malleable and pearlitic malleable

MEMBER



Important Physical Properties

Brinell	163 to 302*
Yield, psi	48,000 to 85,000*
Ultimate, psi	70,000 to 110,000*
Elongation, %	7 to 2*
*Depending upon grade	

Formula for simple fastening...



If you use locating dowels, hinge pins, rivets, set screws . . . or straight, knurled, tapered or cotter-type pins—you should look into the savings in time and money offered by the Rollpin formula. (1) You start with a straight production-drilled hole—no threading, peening or precision drilling is needed. (For example: permissible and typical hole tolerances for effective Rollpin installation are .125-.129 for the $\frac{1}{8}$ " diameter pin; .250-.256 for the $\frac{1}{4}$ " pin.) (2) You need

no more than a hammer . . . simply modified hand tooling, arbor press or hydraulic press to set the Rollpin into a secure, vibration-proof fit. (3) You just drive the Rollpin into the hole . . . and that's it. Spring action locks the Rollpin in place . . . regardless of impact loading, stress reversals or severe vibration. Yet it is easily drifted out . . . and can be re-used in the same hole. For information on how Rollpin can simplify your fastening jobs, fill in and mail coupon below.



A PRODUCT OF

**ELASTIC STOP NUT CORPORATION
OF AMERICA**

For More Information about ad on facing page
←Write No. 185 on Inquiry Card—page 32
DECEMBER 21, 1959

Elastic Stop Nut Corporation of America

Dept. R56-1215, 2330 Vauxhall Road, Union, New Jersey

Please send the following free product information:

☐ Rollpin dimensional data

☐ Rollpin installation suggestions

☐ Here is drawing of our product. What self-locking fastener would you suggest?

Name _____ Title _____

Firm _____

Street _____

City _____ Zone _____ State _____

For More Information Write No. 186 on Inquiry Card—Page 32

PERRYGRAF

SLIDE CHARTS

Quick Product Facts for Stronger
Simpler Selling

SLIDE-CHART SPECIALISTS

Perrygraf handles the job from development of Design to Delivery...has created more than 20,000 designs for hundreds of products...Consumer...Commercial...Professional and Industrial.

200,000,000 Perrygraf-Designed and Produced Slide-Charts have served as CALCULATORS...SELECTIONS...VISUALIZERS..."CATALOGS" and sure guides to correct product applications, use, servicing and repair.

Two Modern Plants...one geared to runs of millions, the other to hundreds...have finest facilities for accurate printing and assembly.

Deliveries at rates as high (in a pinch) as a million per week.

Prices—Consistent with quality work and dependent on quantity and materials range from 2¢ to several \$...average 16¢.

We invite inquiries

PERRYGRAF CORPORATION

Founders of the Slide-Chart Industry
Dept. P-129 • 150 So. Barrington Ave.
Los Angeles 49, California

For More Information Write No. 187
on Inquiry Card—Page 32



Purchase for Profit!

Specify Chicago Molded

This transfer molded part is one of 10 Tormat memory blocks in the Seeburg Selectomatic 200 phonograph. The Chicago Molded body involves closest tolerances at 10 key spots on each side of the blocks. Fine detail and dimensional stability, good dielectric properties and high moisture resistance are also required. CMPC is producing thousands of the unit from an 8-cavity mold. You can Purchase For Profit, too... specify:

**CHICAGO MOLDED
PRODUCTS CORPORATION**
1028 North Kolmar, Chicago 51, Ill.

Letters To The Editor

BLESS THEM ALL . . .

Dear Sir:

I have been a subscriber to your excellent publication for many years and have derived a great deal of assistance from reading it. The September 28 issue, which was devoted to purchasing problems of Western Electric, is excellent.

I would very much appreciate it if you send me either an additional copy of this issue or a reprint of the editorial. I want to keep it for reference purposes. Please bill me for any charges.

E. C. DeMuth
Carlsbad City Schools
Carlsbad, New Mexico

• We are delighted with the attention this study of a purchasing colossus received from small and medium-sized purchasing departments. It's academic to say that the big companies are able to spend more time and money on purchasing research. But this is one of the reasons why we report, and why smaller companies should study these advanced systems and procedures.

than others. And that was the keynote of my speech. Without the Durante reference, the phrase is meaningless—and so am I.

Editors as a breed are sticklers for exactness in communication I felt that I should make this effort to establish my equality in your readers' minds.

Robert H. Wilcox,
Managing Editor
Mill & Factory
New York, N. Y.

HALL OF FAME

Dear Sir:

I am working on a long dreamed of project—a Photo Gallery of Business Publication Greats—to be displayed in our office.

For this I need your help. Would you send Stuart Heinrich's photograph. It would be most appreciated.

Please don't say no. . . .

Elsa S. Denham
Denham & Company
Detroit, Michigan

HIS ONE AND ONLY

Dear Sir:

I have been a purchasing agent for 2½ years, but your magazine has been the only publication to continually furnish me with new ideas, and the answers to old problems.

I have particularly enjoyed the fact that you recognize the need to help executives in small and medium size firms, as well as the large corporations.

Your articles on materials management and value analysis were very interesting and of help to us in both short-range and long-range planning.

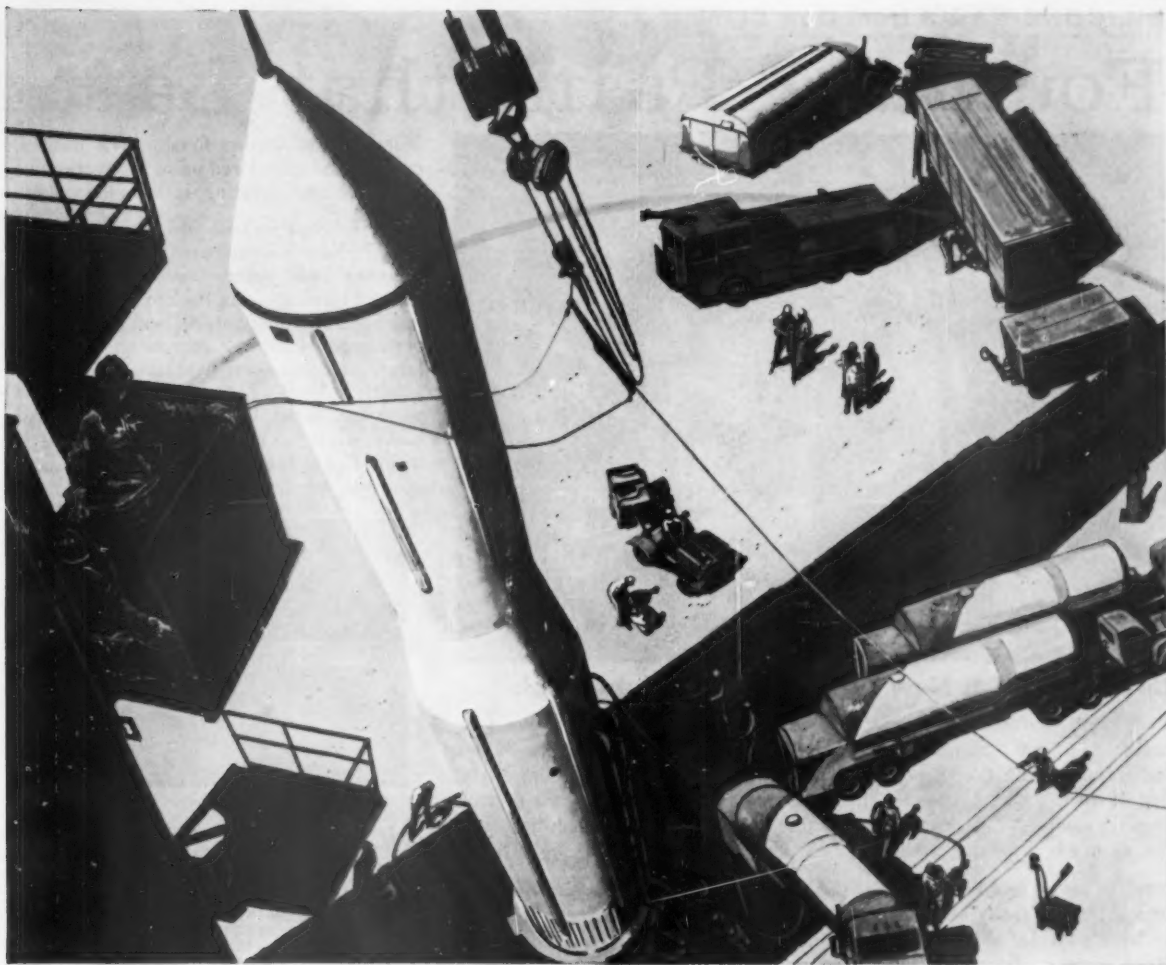
Ralph R. Klotz
Purchasing Agent
Tamms Industries Co.
Chicago, Ill.

CART BEFORE THE HORSE

Dear Sir:

I was most flattered to be dubbed expert in the "Purchasing Follow-up" section of your November 23 issue. Like many of that class, however, I request "equal time" so that I might not be thought to be a complete idiot.

Your column says, in part, that I suggest we "make ourselves more equal." Obviously, unless the reader knows the background for this observation, he is justified in questioning my grammatical antecedents. Jimmy Durante is supposed to have noted that, while everyone in this country is equal, some people are more equal

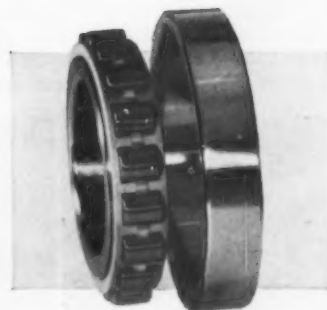


SEARING HEAT, FRIGID COLD TORTURE MISSILE BEARINGS

When a rocket fires, each component must *be* right, *work* right, the *first* time—and operating conditions are extreme! For example, liquid oxygen sends bearing temperatures plunging to hundreds of degrees below zero . . . while engine heat roasts bearings at a near-thousand degrees. Elsewhere, incredibly precise systems move surely on bearings with millionths-of-an-inch tolerances. In these critical applications you'll find Bower Roller Bearings!

On the ground, Bower Roller Bearings keep trucks, equipment and gantries rolling under the heavy loads essential to the missile's launching.

Bower, a major supplier of bearings for missiles and aircraft, also serves many other industries—automotive, construction machinery, machine tool and farm equipment, to name a few. You'll find bearings for most every field in Bower's full line of tapered, cylindrical and journal roller bearings.

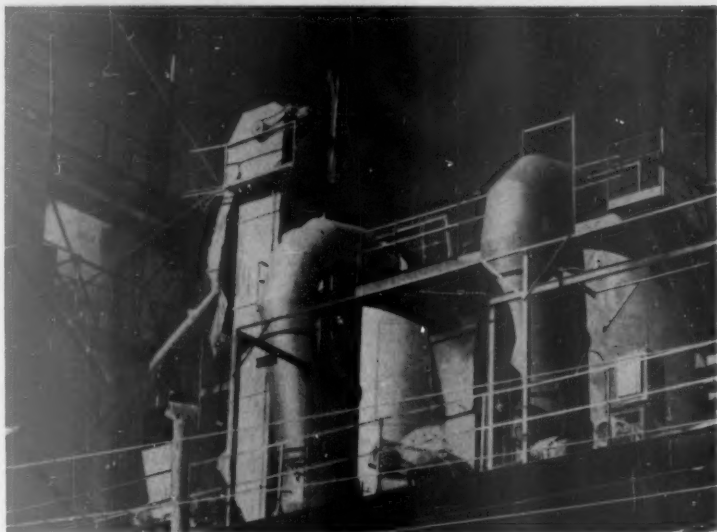


BOWER ROLLER BEARINGS

Bower Roller Bearing Division • Federal-Mogul-Bower Bearings, Inc. • Detroit 14, Michigan

For More Information Write No. 188 on Inquiry Card—Page 32

Found: A Paint that Lasts



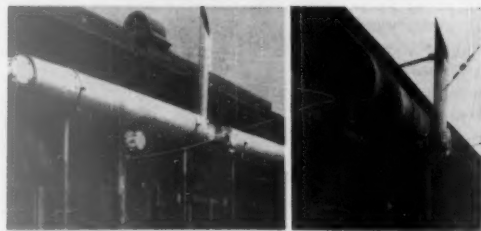
Cut Costs with New Long-Lived Silicone Finishes

You paint your plant to protect against rust and rot, but how can you protect the paint? Sun, rain, heat, sleet, smoke, and other elements of the industrial climate take a heavy toll. Shortly after the paint is completely dry, it starts to deteriorate. Soon, it must be re-applied. Thus, the cost of keeping away rust can run high: not due to the price of the coating material as much as to the repainting time involved.

Now, however, new paints based on silicone resins make it possible for you to make some really substantial cuts in paint maintenance costs. Proven to have superior durability, these silicone finishes last a good 25% to 100% longer. They keep their gloss and color and film integrity despite tough exposure to weather . . . despite high temperatures that burn or crack conventional finishes.

Naturally, this greater staying power means fewer repainting jobs. And that's especially important in hard-to-get-at areas of the plant, or on hot-running equipment that must be shut down for painting.

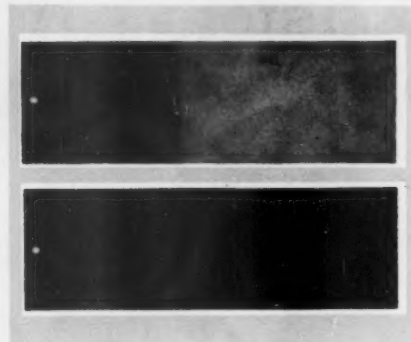
For instance, the Austin White Lime Company, of Austin, Texas, had difficulty keeping paint on the kilns and stacks shown above. Then they tried a paint based on Dow Corning Silicones, and report it "... by far the most satisfactory paint we have ever used." You can see the gleaming results.



Many other firms have come to the same conclusion. At left are two diesel mufflers at the Philadelphia Gas Works. Both were painted two years before these pictures were taken; one with an organic coating, the

other with a silicone finish. The burned, cracked and discolored paint is the organic; the "like-new" coating is the silicone.

What if there's no heat problem, just weathering? New silicone-based coatings outlast conventional paints even where high temperatures are no problem. Look at the test panels in the photo. These panels have been exposed for one year in an industrial location where corrosive atmospheres frequently prevail. The conventional organic paint has faded, lost its gloss and chalked badly, while the silicone finish (bottom) is still in fine shape.



Colors Unlimited . . . Silicone finishes run the complete spectrum. If you want a hot-spot finish that will resist 1,000 F, certain pigments such as aluminum must be used.

But, when temperatures are not high enough to damage the pigment, you can get virtually any color you wish. This is important, for it means that, for the first time, you can carry color-coding systems over onto hot equipment without worrying about early paint failures.

Product finishes based on Dow Corning Silicones further prove the resistance to chalking, checking, fading and oxidation of these resins. For example: Sherer-Gillett, Marshall, Mich., a major producer of refrigerator display cases for supermarkets, has found a silicone-based enamel superior in durability . . . retaining high gloss after long wear . . . capable of absorbing more abuse.

Why not investigate silicone paints for your plant? Send today for the descriptive brochure. "Why Silicone-Based Paints Mean Less Maintenance." Write Dept. 2024.

Your nearest Dow Corning office is your number one source for latest information and technical service on silicones.



Dow Corning CORPORATION
MIDLAND, MICHIGAN

ATLANTA BOSTON CHICAGO CLEVELAND DALLAS LOS ANGELES NEW YORK WASHINGTON, D. C.

For More Information Write No. 189 on Inquiry Card—Page 32



How "PERSONALIZED SERVICE" Can Cut Your Custom Forging Costs!

For over 50 years personalized service has been a *must* at Atlas and General. Personalized service that offers you many advantages. Advantages that mean real savings in time and money.

At Atlas and General no job is ever "routine". Your specific needs are always individually serviced by forging engineers and metallurgists who work directly with you in your plant. Men qualified by years of diversified forging experience to understand your individual design and forging problems.

Forging experts at Atlas and General keep you constantly informed throughout your job — from forging design to finished product — to assure you of a finished forging that fulfills your exacting requirements.

This customer relationship "extra" has earned a reputation for superior service. But Atlas and General's most important product is still the highest quality custom forgings . . . at production line costs!

Die impression forgings of alloy, stainless, armor and carbon steel, titanium alloys, and a wide range of the newest alloy specifications, are produced with complete, modern production facilities and equipment. Sizes and weights range from one-half pound to 350 pounds and controlled finished weight is measurable in grams.

For further information on how Atlas and General can cut your forging costs, write to the nearest address below for your free booklet, "Personalized Forging Service".



ATLAS DROP FORGE COMPANY

Lansing, Michigan

GENERAL DROP FORGE CORP.

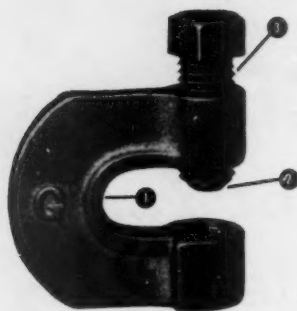
Buffalo, New York

Subsidiaries of

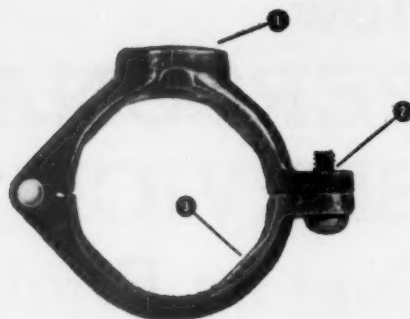


Dana Corporation

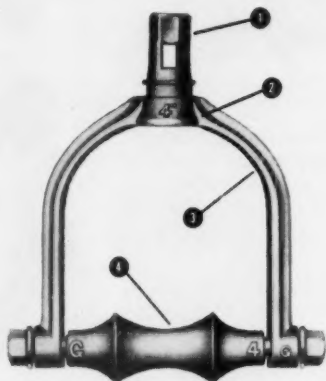
Look at all the extras you get in Grinnell Pipe Hangers...yet you pay no more!



GRINNELL C-CLAMP, FIG. 88 — 1 Ribbed, malleable iron casting, for extra strength 2 Hardened steel, cup-point set screw for good "grip" on beam 3 Full thread engagement—casting is drilled and tapped for rod and set screw



GRINNELL EXTENSION SPLIT RING, FIG. 138 — 1 Nipple engaging thick section of malleable iron gives rigidity for support from above, below or from wall 2 Tapped to take screw. No nut to lose 3 Special ring contour holds pipe or tubing firmly



GRINNELL ADJUSTABLE SWIVEL PIPE ROLL, FIG. 174 — 1 Swivel shank permits adjustment without elaborate support 2 Locking device prevents accidental adjustment change; no lock nut required 3 Ribbed design in malleable iron for better strength, lightness, appearance 4 Easy installation; maximum adjustment



GRINNELL CB CONCRETE INSERT, FIG. 282 — 1 One body size accommodates several sizes of rods 2 Slot takes reinforcing rods to assure maximum load rating 3 One-piece body prevents concrete seepage 4 Teeth on insert and nut hold rod firmly in place 5 Homogeneous composition of malleable iron throughout

You get *more* hanger for the money from Grinnell, because Grinnell's huge volume reduces production costs... lowers prices right into line with competitive hangers offering less.

Yet you get *so much more*... wider choice of types and sizes; better quality control; published ratings for *all* hangers; faster delivery from warehouses

nationwide; and more responsible field service by trained Grinnell personnel... regardless of how far from the job site the sale was made! Grinnell Company, 277 West Exchange St., Providence 1, R. I. Branch Warehouses in Principal Cities.

Remember, The Best Costs No More — from America's #1 Supplier of Pipe Hangers and Supports



Call your local Grinnell Distributor for pipe hangers, cast and malleable iron fittings, malleable unions, steel nipples—all made by

GRINNELL

For More Information Write No. 191 on Inquiry Card—Page 32

Purchasing People In The News

Joseph A. Heiman has been named general purchasing agent for **Rockwell Manufacturing Company's** headquarters purchasing



Joseph A. Heiman

department at **Pittsburgh, Pa.** He has been purchasing agent for the company's Instrument Division, **Tulsa, Okla.** Mr. Heiman joined **Rockwell** in March, 1956 as a senior buyer in the Pittsburgh office. Prior to that he had been a buyer for eight years with **Carborundum Company.** In 1956, he was promoted to his most recent position. Mr. Heiman attended **West Virginia University.** He is a member of the **National Association of Purchasing Agents.**

James LaBay has been appointed director of purchases of **The AP Parts Corporation, Toledo, Ohio.** **Roy Haugen** will continue



James LaBay

in his position of assistant director of purchases.

Mr. LaBay first joined AP in 1950 as an assistant plant manager. For the past six years he

has been director of personnel. Prior to joining the company he was production control manager of **Butcher and Hart.** Previous to that he was with the **Prudential Life Insurance Company.** Mr. LaBay attended **DeSales College, The University of Toledo** and the **University of Indiana.**

Cary Chemicals Inc., of **East Brunswick and Flemington, N.J.,** has announced the appointment of **Joseph A. Milner** as purchas-



Joseph A. Milner

ing agent and controller of traffic. Prior to joining the company Mr. Milner was in charge of purchasing and material control at both **Ansonia Wire & Cable Co., Ashton, R.I.,** and **Holyoke Wire & Cable Co. of Holyoke, Mass.** He is a member of the **National Association of Purchasing Agents**—a past president and national director of **Western Massachusetts Association of Purchasing Agents,** past chairman of **Electronic Buyers' Group of NAPA,** charter member of **Insulators of Electrical Buyer's Group (NAPA),** and also past chairman of **New England Purchasing Agents Conference.** He is a graduate of **Northeastern University, Boston, Mass.**

O'Sullivan Rubber Corporation, Winchester, Va., has announced the appointment of **Charles G. Turner, Jr.** as its purchasing agent. He succeeds **William O. Grove** who has resigned. Mr. Turner began his career with **E. I. du Pont de Nemours and Co., Inc., Seaford, Dela.** In 1955 he was

employed by **O'Sullivan** where he has served as senior accountant, advertising manager and public relations manager. He is a graduate of **The Citadel** where he received a **B.S. degree.** Mr. Grove has accepted a position with **Victor Products Corporation, Hagerstown, Md.** He has been elected vice president of purchasing and a member of the board of directors. He joined **O'Sullivan** in 1933 and has been purchasing agent for the past 16 years. He is a graduate of the **University of Richmond.**

Appointment of **O. G. White** as director of procurement for **Chrysler Corporation's Defense Operations Division, Detroit,**



O. G. White

Mich., has been announced. Mr. White succeeds **A. H. Hilverkus** who has been named to the newly created position of special assistant to the division general manager. Mr. White, director of the division's manufacturing staff since 1958, joined **Chrysler** in 1951 as a member of the corporate legal department. In 1953 he transferred to the **Chrysler Delaware Defense Plant** as defense contract administrator. He was named executive assistant to the operating manager in 1954 and two years later became executive assistant to the director of manufacturing—**Defense Operations Division.** He received a **Bachelor of Arts degree** from **Michigan State University** and a law degree from the **University of Michigan.**

For More Information about ad on following page Write No. 192 on Inquiry Card—pg. 32→

Production Parts

A MATTER OF ACCURACY, QUALITY AND SERVICE



Whatever your end-product—power mower or guided missile—producing it at less cost can depend on selecting the one source for component parts and assemblies that offers the right combination of accuracy, quality and service.

As a specialist in volume production of precision parts, Ex-Cell-O has the manpower, the equipment and the manufacturing experience to meet your requirements with target-date delivery of precision-machined production parts of any size or shape, any metal or finish, in any quantity you specify.

Find out from your local Ex-Cell-O Representative just how quickly and economically Ex-Cell-O's extensive product design, development and manufacturing facilities can be geared to your precision production parts requirements.

Call him today. Or if you wish, send your print or specifications directly to Ex-Cell-O for a prompt quotation. Ask for Bulletin 365912.

XLO EX-CELL-O FOR PRECISION

EX-CELL-O
CORPORATION
DETROIT 32, MICHIGAN 59-62

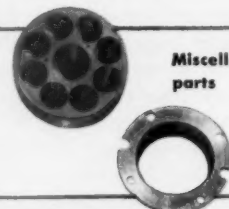
EX-CELL-O PRECISION PRODUCTS INCLUDE: MACHINE TOOLS • GRINDING AND BORING SPINDLES • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS • DRILL JIG BUSHINGS • TORQUE ACTUATORS • THREAD AND GROOVE GAGES • GRANITE SURFACE PLATES • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT

Aircraft parts

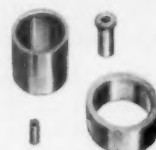


Ground worms

Miscellaneous parts



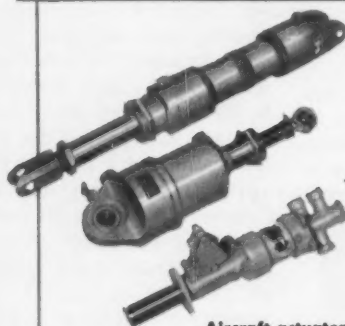
Drill jig bushings



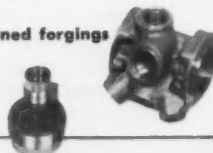
Production parts



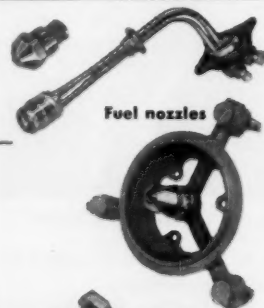
Aircraft actuators



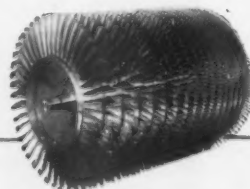
Machined forgings



Fuel nozzles



Railroad details



Jet blades, rotors



Cost-Cutting-

A SIMPLE MATTER OF SELECTION



59-15



COUNTERBORE SETS



INVERTED SPOT
FACERS

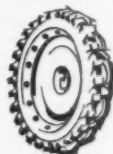


COUNTERBORES—

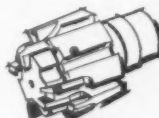
COUNTER SINKS,
HOLDERS, PILOTS



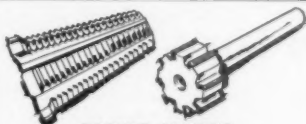
FLOATING TAP
DRIVERS



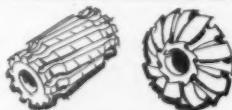
INSERTED
BLADE
FACE MILLS



MULTIPLE
DIAMETER
BORING
CUTTERS



GROUND MULTIPLE
THREAD MILLING CUTTERS



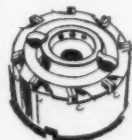
GROUND AND UNGROUND
FORM-RELIEVED CUTTERS



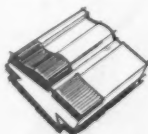
SINGLE-POINT
CARBIDE TIPPED TOOLS



MULTIPLE STEP
BORE REAMERS



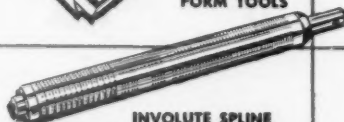
CARBIDE
TIPPED
CYLINDER
BORING CUTTERS



DOVETAIL
FORM TOOLS



CARBIDE
TIPPED BROACH SECTIONS



INVOLUTE SPLINE
SHELL TYPE BROACHES

Every standard and special tool is of but one quality—the finest available. Since 1921, Continental has specialized in cost-saving cutting tools (just a few of which are shown at left), producing design innovations in hardened, high-speed tool steel, carbide and special-alloy cutting materials.

Available in the types and sizes required to do the complete job from rough to finish, Continental Cutting Tools are job-tested in the toughest proving ground—Ex-Cell-O's own machine tool and precision parts production lines. As a result, they come to you ready to increase the output of even your best machines!

Continental engineers will be glad to work with you in selecting the correct CTW Cutting Tool for long life and maximum performance. See your local Ex-Cell-O Representative, or write direct to Continental Tool Works Division for full details. In Canada, contact your local Ex-Cell-O Sales Associates Representative or write direct to Colonial Tool Co., Ltd., Windsor.

Continental **TOOL
WORKS**

DIVISION OF

EX-CELL-O
CORPORATION
DETROIT 32, MICHIGAN

Purchasing Agents—

How's your

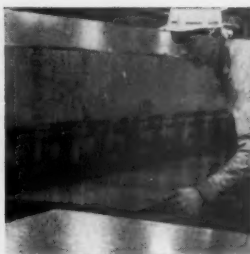
Here's how you can *test yourself* on your skill as a steel buyer. Just answer the following questions after reading the instructions carefully. The correct answers are on the next page. (Don't peek!)

1. One of the types of equipment shown in these four pictures is not ordinarily available at steel service centers. Which is it?

a



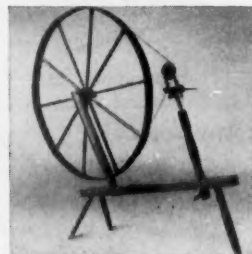
b



c



d



2. Service centers usually stock these types of steel (Circle the correct answers—and watch it, this one's tricky!):

a Plates

b Saucers

c Carbon Bars

d Alloy Bars

e Sheets

f Pillow Cases

g Steel Wool

h Structural Shapes

i Reinforcing Bars

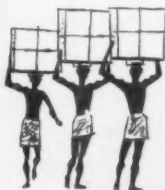
j Foundation Garments

k Tool Steel

3. You get fast steel deliveries from service centers because they ship direct to you by . . . (Select one):



a



b



c



d

steel BUY-Q.?

4. This one tests your powers of logical reasoning:

A steel service center is to the average steel user as . . . (Select one):

a Soup is to nuts **b** Chester is to Marshal Dillon **c** His right arm is to Ingemar Johansson

Now check your answers—and good luck!

ANSWERS:

(1) You should have checked (d). Not that service centers wouldn't have a couple spinning wheels around if they'd be of service to you—it's just that there hasn't been much demand lately. Credit: 15 points.

(2) You should have omitted (b), (f), (g), and (j), and we won't budge an inch. Credit: 40 points. Subtract 5 for every item you got wrong.

(3) If you picked (d) again you're right on the beam. Most of our readers prefer truck deliveries, all things considered. Credit: 20 points.

(4) If you picked (b), you're right. BUT, if you picked both (b) and (c), we'll give you *double* credit. Score: 15 points, or 30 if you were really alert!

Now total your score.

90 and up—Congratulations! You're a top-flight purchasing agent and have probably been buying Bethlehem products from steel service centers for *years*.

80-89—Good show, but there's room for improvement. Don't let your inventories get too big when you should be relying on a service center.

70-79—Better brush up on steel service centers. Use them properly and you'll save your firm lots of money (and *you* may be on your way to Fame and Fortune).

Below 70—You better come by the office and have a long talk with us.

Smart buyers like you undoubtedly scored high. Now why not tell all your friends how *they* can depend on steel service centers for the best of steel products (made by Bethlehem!) and the best of service.

Buy

BETHLEHEM STEEL

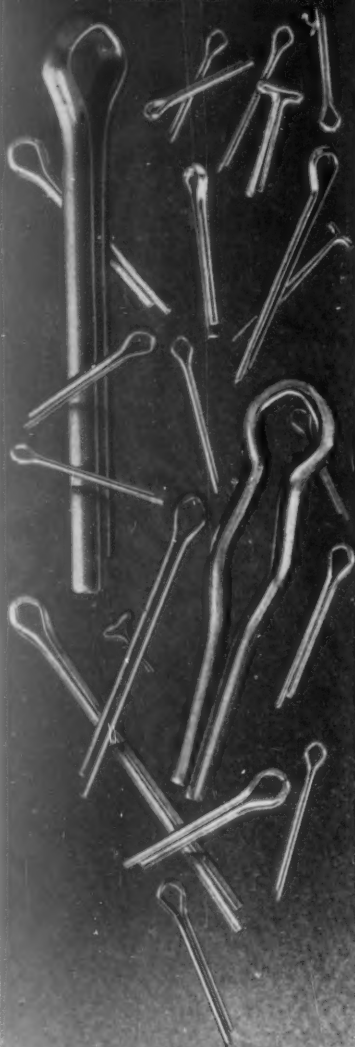
from your local Steel Service Center

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Export Distributor: Bethlehem Steel Export Corporation



Hold it ...with Hindley Cotter Pins



Here's the most complete source for precision cotter pins. A complete range of metals including Monel, and unusual styles and sizes. Uniformly made for fast assembly. Write for folder.

Hindley
Since 1897

Hindley Manufacturing Co., Cumberland, R. I.
Wire Hardware • Cotter Pins • Plumbing Specialties

For More Information Write No. 194
on Inquiry Card—Page 32

FOB—"filosofy of buying"

THE WORLD is so full of gimmicks and publicity stunts that maybe we're displaying an unusual amount of stupidity by puzzling over an incident that happened recently. But here goes anyway:

We received a personal letter from the Postmaster of the City of New York, along with a two-page press release and a brochure describing "a major step in postal progress," inviting us to a press showing of special postal equipment at the 71st Regiment Armory. We were told that we would see a display of prototypes of fully automatic, electronic machines that process mail at fantastic speeds. The display was to emphasize the theme "Better Postal Service Through Research."

We were asked to meet the Postmaster at the Armory on Friday, November 20, at 9 a.m.

The letter was delivered to our office on Friday, November 20, at 11:30 a.m.

ALL YOU collegians, old and new, who have attended tea dances:

Why do they call them that?

NOW IT'S OFFICIAL. If there was any doubt that value analysis had arrived, the doubt has disappeared. For the term "value analysis" and its meaning are no longer the private property of purchasing agents and other interested industrial men. Over 40,000,000 Americans have been introduced to V.A. by U.S. Steel Supply. In the midst of a drama of love and duty presented on "The U.S. Steel Hour" television program, a commercial featuring a lovely young housewife described value analysis in everyday language for everyday people. U.S. Steel's value analysis chart was also shown and ex-

plained. A few more commercials like that and V.A. will be as popular as the former fixed quiz programs were in their heyday.

A NOBLE FIGURE is passing from the American scene. And what's to blame? Value Analysis, that's what.

We speak with tears in our eyes of the whitewing. The whitewing, dear friends who are less than 40 years old and who were never brought up in a big city, is not a bird. It is not a ballplayer. It is—or was—a street cleaner, a man who carried a long-handled stiff broom and pushed a wheeled container around the city streets cleaning up the debris that a metropolitan civilization leaves in its wake. The whitewing was the subject of numerous cartoons, gags and slightly vulgar stories, particularly when the circus was in town or the mounted cops were on parade. He used to have brief moments of glory on lower Broadway as he followed parades for such people as Gertrude Ederle, Lucky Lindy, and the Queen of Rumania, up to City Hall and Jimmy Walker. Occasionally an enterprising reporter, looking for a new angle, would hang back and ask the white clad sweeper how many tons of ticker tape and other

PURCHASING
LIBRARY



"Couldn't you wait 'til tomorrow. I'm pressing some flowers!"

PURCHASING

paper he thought had been thrown from office windows that day. And the sweeper would rest on his broom and guess and get his name and perhaps his picture in *The Daily News*.

Then progress and some efficiency expert caught up with the white uniform. It got dirty too quickly, the reasoning went, so why not change to olive drab. This was done, and the whitewing was on his way out.

Now he's practically completely out. A latter-day value analyst in the Sanitation Department has persuaded the city to buy motorized, vacuumized sweepers that inhale all the junk that litters New York streets. The machine costs \$10,500. Sweepers average \$102 for a 40-hour week. "Frankly," says a Sanitation official, "the men with brooms are getting too costly. How can you pay a guy \$100 a week to go around pushing a broom for a 40-hour week."

Farewell, friend of our youth, familiar figure on Broadway, Herald Square, and 42nd Street! Ave atque vale!

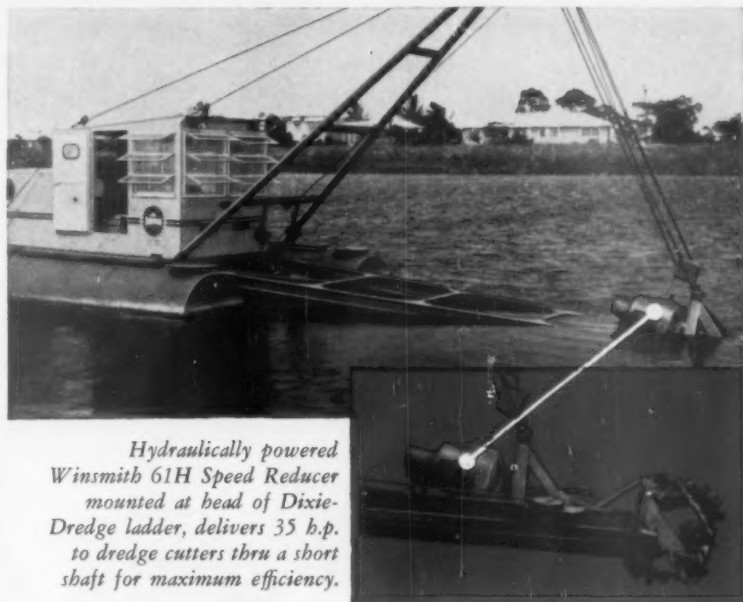
SOMEbody's always trying to get into the act! Just when the business giftmakers get public attention focused on Christmas, along comes an outfit called Birthday Gifts in Business. "Why," BGIB asks in its direct mail promotion, "should your company send birthday gifts to clients?" And it answers: "Christmas is usually thought of as the time for gift giving . . . but it is also the time when your customers are deluged with gifts from many companies. Result? The sincerity and personal quality of the Christmas gift you send is lost in the shuffle."

Pretty vicious attack on the sacred institution, isn't it? But BGIF redeems itself at the very last minute after its three-page plug for birthday gifts. A P.S. reminds the reader that hand-signed etchings are now available as birthday gifts. Then a P.P.S. adds—"If you prefer to give Christmas gifts, mail the card for prices now."

DECEMBER 21, 1959

Winsmith speed reducers used by Dixie-Dredge

in "one of the toughest jobs ever applied!"



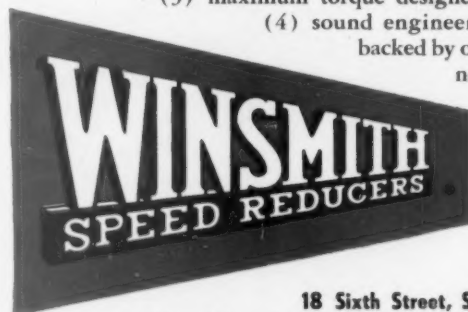
Hydraulically powered Winsmith 61H Speed Reducer mounted at head of Dixie-Dredge ladder, delivers 35 h.p. to dredge cutters thru a short shaft for maximum efficiency.

"Winsmith Speed Reducers driving Dixie-Dredge cutters have a high shock load application and probably perform one of the toughest jobs ever applied," reports John H. Milne, president of Service Machinery Corp., North Miami, Florida, makers of this highly efficient, self-contained mobile dredging unit.

"Winsmith Reducers offer us a high torque output in a small package," says Mr. Milne. "It operates at all angles from vertical to horizontal and has been very satisfactory in use."

If you want satisfaction such as Service Machinery and leaders in every other industry are enjoying, check these Winsmith advantages: (1) most complete selection for every output requirement from 1/100 h.p. to 85 h.p. in ratios from 1.1:1 through 50,000:1, (2) shaft and mounting arrangements to fit your installation, (3) maximum torque designed into minimum space, (4) sound engineering and craftsmanship backed by over fifty years in the business.

Write today for Catalogs 155 and SM-57. Select the "custom" reducer for your job from Winsmith Standard stock!



WINSMITH, INC.

18 Sixth Street, Springville, (Erie County), N. Y.

For More Information Write No. 195 on Inquiry Card—Page 32

For More Information about ad on following page Write No. 196 on Inquiry Card—pg. 32→



E. S. Waters, Manager—Purchasing of General Electric's
Large Steam Turbine-Generator Department
discusses Productive Purchasing:

Today's Purchasing Agent Checks Added Values

No purchasing agent today would regard buying strictly on price as good purchasing—and certainly not as productive purchasing. The stature which the purchasing agent has achieved in the last twenty years is directly traceable to at least three things: his skill in applying such modern techniques as value analysis, the productive relationships he has established with other functions of the business—engineering and marketing, for example—and his skills in identifying total values in products and materials.

Purchasing agents who are concerned with increasing the profitability of their business will try to check off added values like these:

☒ **QUALITY CONTROL** today goes beyond adherence to specifications and the use of statistical sampling methods. Check on a supplier's creative approach to reducing the cost and improving the results of this critical activity.

☒ **APPLICATION ENGINEERING** capabilities of a supplier should be checked to avoid buying products which do not properly go together into an engineered system.

☒ **SERVICE** backup can be evaluated on the basis of reputation, past performance, and facilities and people in place. This added value can be as important as price.

☒ **PRODUCT DEVELOPMENT** or materials improvement is the kind of added value offered by creative suppliers who see their business dependent on helping you to offer better products and still hold prices in line.

☒ **INSTALLATION & SERVICE ENGINEERING** are important capabilities to check on such products as electrical apparatus. See if your supplier can simplify start-up problems and help train operating personnel.

☒ **ANALYTICAL ENGINEERING** offers you the latest tools of rapid analysis and research. Check to see if your supplier can make studies that will help improve the efficiency of your basic processes.

☒ **PROJECT CO-ORDINATION** focuses the full capability of the supplier's management and engineering structure on your order for product combinations or systems. Check to see if he can give you this added value.

☒ **MARKET SUPPORT** is available from relatively few suppliers. Assess the value of market and sales development programs undertaken by the supplier which contribute to the growth of your business.

☒ **PROMPT DELIVERY** is an added value when the supplier takes steps (automating paper work, for example) to give you an even better delivery schedule.

☒ **VALUE ANALYSIS** examines a finished product to assess added product functions, values, and economies. Check to see if your supplier is achieving savings along with product improvements by this method.

GENERAL  ELECTRIC



FREE BULLETIN

SEND COUPON FOR GED-3877
CONTAINING MORE
INFORMATION ON
PRODUCTIVE PURCHASING

GENERAL ELECTRIC COMPANY
SECTION 666-3
SCHENECTADY 5, N. Y.
Please send me GED-3877

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____



QUALITY RINGS TRUE

Snap rings are one of the most elementary of fasteners — yet are called upon to play vital roles in the assembly of thousands of products. This is why there can be no sacrifice of quality when you specify snap, bearing, lock or retainer rings for your products. For unless the rings you specify do their job well — literally hold your products together — the result can only be loss of customer satisfaction. Your best assurance of quality is the reputation of the company who supplies your

rings. Eaton's Reliance Division handles every step in the fabrication of rings from the cold finishing of the spring-quality steel through the forming, heat treating and finishing. Every step is guarded by an exacting quality control program that leaves no stone unturned to assure that your specifications are held completely. In addition to custom rings, Reliance produces an extensive line of standard rings for most standard ring applications. Write for engineering specifications.



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SALES OFFICES: New York • Cleveland • Detroit • Chicago • St. Louis • San Francisco • Los Angeles

PRODUCTS: Engine Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Hydraulic Pumps
Truck and Trailer Axles • Truck Transmissions • Permanent Mold Iron Castings • Automotive Heaters and Air Conditioners
Fastening Devices • Cold Drawn Steel • Stampings • Forgings • Leaf and Coil Springs • Dynamic Drives and Brakes
Powdered Metal Parts • Gears • Variable Speed Drives • Speed Reducers • Differentials • Centralized Lubrication Systems

For More Information Write No. 197 on Inquiry Card—Page 32

PURCHASING

Highlights of This Issue

✓ P.A.'s 1960 Business Forecast

Purchasing executives have a well deserved reputation for being excellent economic forecasters. And why shouldn't they?—it's part of their job. They are in a unique position to call the turn on the business outlook because of their close day-in-day-out contact with commodity markets. That's why PURCHASING Magazine's annual survey of 1000 of the nation's leading P.A.'s makes important, interesting reading. For the straight facts on how P.A.'s feel about business prospects in 1960 see the analysis on page 11 and Purchasing Opinion on page 15.

✓ Purchasing in Washington Spotlight

When Congress convenes again next month it will consider a number of bills related in some way to purchasing. Whether you agree with the theory that P.A.'s should take political action on legislative matters affecting their business, you ought to know what our lawmakers are thinking and doing. Our Washington bureau chief reviews current bills on fair trade, price notification, military procurement, and other pertinent subjects—and analyzes their prospects for passage. See page 74.

✓ The Voice From the Chimney

The annual soul-searching about Christmas gifts in business has generally been pretty one-sided. P.A.'s have been explaining, denouncing, pointing accusing fingers, and rationalizing about Yuletide remembrances. But what's the other side of the story? What do the givers think about giving? You'll get a new slant on an old problem in this issue. See page 78.

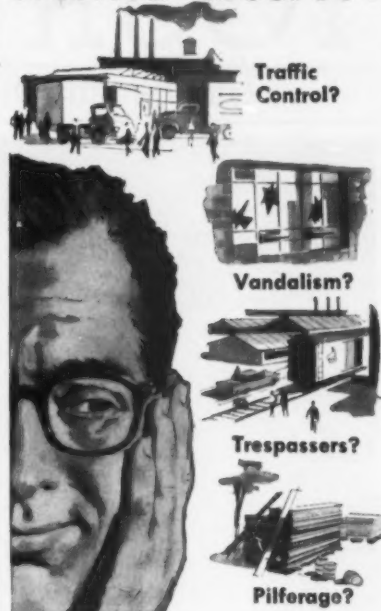
✓ What's the Law on Late Deliveries?

When suppliers fail to meet delivery dates it creates a lot of problems—sometimes on the legal side. What may come as a surprise to many P.A.'s is the fact that it's not always easy to force a supplier to pay damages for late delivery. Lyle Treadway, purchasing agent and lawyer, discusses the legal aspects of this problem. See page 82.

In Future Issues

Watch for the first (January 4) issue of the new year—Top authorities write on purchasing's new responsibilities and opportunities—Articles by Kennedy, Miles, De Rose, Heinritz, Gainsbrugh.

Worried about...



Call your ANCHOR MAN



How well are you protected from the financial drain of vandalism, from petty pilferage, from costly lawsuits due to injuries?

Your Anchor Man can show you the many ways Anchor Fence is engineered for protection—for instance, how Anchor's exclusive square terminal posts give you added security by removing potential toe and hand holds. His visit could save you thousands this year.

Call your local Anchor Fence office today. Ask for the Anchor Man who specializes in your type of installation. For informative literature write: ANCHOR FENCE, 6615 Eastern Ave., Baltimore 24, Maryland.



Plants in: Baltimore, Md.; Houston, Texas; and Whittier, Cal. Sold direct from factory branches and warehouses in principal cities.

For More Information Write No. 198 on Inquiry Card—Page 32

YOUR ELECTRIC TRUCK BATTERY

Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 20, Pa.



Exide-Ironclad-powered electric industrial truck loads pallets of Listerine into highway van at Lambert-Hudnut Mfg. Labs, Lititz, Pa.

HOW TO BUY ELECTRICS WHEN MONEY'S TIGHT... LEASE BATTERIES AND CHARGERS FROM EXIDE

When Lambert-Hudnut Mfg. Labs built its new plant in Lititz, Pa., it wanted industrial trucks with battery power... for economy, cleanliness and freedom from fumes. But money was needed for other capital equipment too. How could Lambert-Hudnut stretch its dollars?

Exide's lease plan provided the answer. For an initial 6-truck fleet, Exide supplied complete battery and charging equipment on a lease basis. No capital investment was required. Since then the company has added three more trucks... again leasing batteries from Exide.

You too can use this plan to reduce the capital outlay on electric industrial trucks. Choose from two leasing plans: uniform monthly payments where payments are equal for the period of the lease; or accelerated monthly payments where higher payments over the first few years mean reduced payments later. You can also negotiate a purchase option with either plan.

For more details on leasing or buying Exide-Ironclad batteries and chargers, write for Bulletins #5761 and #6230



Today's best value in an industrial battery. 50 years ago, Exide patented the Exide-Ironclad tubular positive plate battery. Today it is still unmatched for power life and economy. Latest improvements boosted power 25% to 44% in the same size... with even longer life potential.



EXIDE CHARGERS PROTECT BATTERY LIFE

The new vertical Exide chargers are specially designed for industrial truck use. Available in a full range of ratings to meet the requirements of all trucks. Taper charge and automatic shutoff protect battery from overcharging... insure longest possible life. Vertical design saves two-thirds in floor space required. Down draft cooling keeps dirt accumulation to a minimum. Easy to maintain.

Regular Exide service covers both batteries and chargers. Write for new brochure #6259 giving complete information.

Exide®

Purchasing and Politics

PRESIDENT T. O. English of the National Association of Purchasing Agents is in favor of N.A.P.A. taking a public stand on legislation affecting purchasing. Several local associations before which Mr. English has made the suggestion have been polling members to see how they feel about the suggestion.

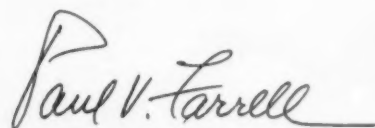
The idea is sound in principle. N.A.P.A. was founded and exists for one general purpose, the advancement of purchasing. It is not a social or charitable group. It is an organization with an admitted special interest, the purchasing agent. Its aims and activities do not conflict with the common good and often promote it. Granting this, it seems only reasonable that N.A.P.A. makes its collective voice heard on matters that may affect its members' careers.

But there are possible booby traps when a non-political group takes political action. The principle of "What's in it for me?" may become the sole basis for judging not only specific legislation but the whole organization of society. It may come as a shock to some businessmen, but it's true that many of them are unconscious Marxists. They interpret all history, all human action exclusively in terms of economics and human greed. Political action based on this philosophy soon gets beyond a specific goal and becomes another maneuver in the struggle for power between the haves and the have-nots. And the groups that engage in it become the legitimate targets for the abuse and enmity of other power blocs.

Fortunately, the class war approach to politics appears far from the minds of those who want N.A.P.A. to speak up on legislation. Mr. English and others have made it quite clear that they advocate taking a position only in the relatively narrow field where purchasing as such is directly affected. This presumably would cover such things as amendments to the Robinson-Patman law and price-fixing legislation. It is here, however, that the association may possibly run up against another difficulty: how do you get agreement among thousands of members that a particular piece of legislation should be opposed or supported? How do you reconcile the conflicts of interest that might arise over fair trade bills, for example? Do you commit a member to battle against something that is at the very core of his company's sales policy?

N.A.P.A. would be breaking with tradition by entering the political arena, even in the very limited way suggested. But the move is logically justifiable. The biggest obstacle facing the plan is the practical one of making each official position reflect the true feelings of every member of the association.

PURCHASING MAGAZINE
DECEMBER 21, 1959



New user reports say once again... rely on Ryerson for increased values

Here are new case histories that typify how thousands of steel and aluminum users who rely on Ryerson get *increased values* for their purchasing dollars. Individual points of difference between Ryerson and other sources may not in every case seem overwhelming—but in total they add up to an important difference in dependability, experience and capacity to serve.



Production up 30%. In the manufacture of this coupling, a large job shop recently switched from MT 1015 tubing to Ledloy® 170 tubing from Ryerson. Machin-

ing speed was stepped up to 170 sfm, and production increased 30%.

Emergency needs met. A breakdown was cutting output of a big paint producer, and the steel needed to repair the break was not available in the area. However, the required analyses and size were on hand at the nearest Ryerson plant 200 miles away—and within an hour Ryerson delivered 100 feet of this bar stock to the local airport. Three and a half hours after calling Ryerson in another state, the customer had his steel.



Aluminum key to low-cost production. Aluminum from Ryerson replaced chrome-plated brass on this hub for a disposable hypo needle—saving two-thirds of

basic material cost plus elimination of expensive chrome plating. Machinability was equal to that of brass.



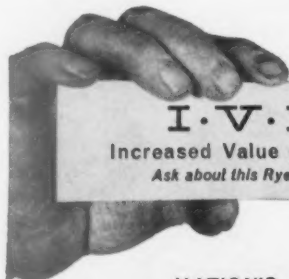
Switch to stainless doubles production of missile part. When this part was made of alloy steel, tolerances for threads and finish were not consistently held. And there were 25% rejects after plating. The solution came when specs were changed to free-machining Type 416 stainless from Ryerson. Plating was eliminated... production was doubled... thread tolerances were held... and the required finish was easily produced in milling operation.

Better product appearance and a worthwhile saving in material cost resulted when a Ryerson man recommended that a producer of portable coolers switch from one aluminum alloy (3003-H14) to another (5005-H14). Slightly higher structural strength was a bonus value. Unusually broad aluminum stocks and technical resources often enable Ryerson to serve in this way.



PVC cuts costs 50%. A screw machine shop recently replaced nylon with Ryertex®-Omicron PVC in the manufacture of a nipple adapter and coupling nut, and cut costs 50%. PVC machined better—to closer tolerances with improved finish... ran faster without "gumming." Note the perfect cutting of threads and barbs. Threads fit perfectly.

These examples illustrate some of the many advantages that make Ryerson service truly unique. A call to your Ryerson representative may solve similar problems for you.



I.V.B.M.
Increased Value in Buying Metals
Ask about this Ryerson Plan for 1959

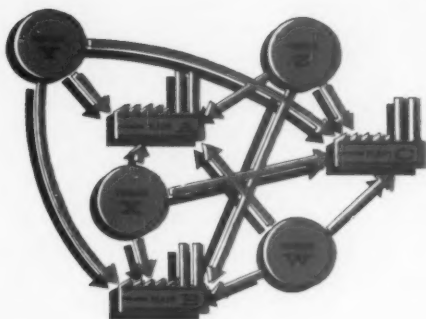


RYERSON STEEL®

Joseph T. Ryerson & Son, Inc., Member of the **INLAND** Steel Family

STEEL • ALUMINUM • PLASTICS • METALWORKING MACHINERY
NATION'S MOST COMPLETE SERVICE CENTERS IN PRINCIPAL CITIES COAST TO COAST

For More Information Write No. 200 on Inquiry Card—Page 32



How to Get The Right Mix When Buying Raw Materials

Linear programming can help you get the optimum mix for given product specifications and raw material prices. It also gives the answers to what to do when both prices and specifications change.

By Spencer B. Smith

Note to the Reader

As an aid in reading this article, all the tables referred to in the text appear on the tearout sheet (pages 71 and 72). Purpose of the tearout sheet is to make it possible for the reader to have all the tables readily available so that it is unnecessary to flip back and forth from text to tables.

Since there is a good chance the tearout sheet may be lost once it has been removed, we have reprinted the same charts on other pages of the article. Even if you lose the tearout sheet you will still have a complete article should you wish to refer to it at a later date.

MANY COMPANIES are using linear programming to select the mix of raw materials to purchase so that manufacturing requirements will be satisfied at minimum cost. Petroleum refiners use it in choosing crude oils for blending aviation gasolines. Steel manufacturers employ it to select types and amounts of steel scrap to buy. Livestock feed producers use linear programming to determine the most economical combination of grains to use in their feeds.

This simple example will illustrate the characteristics of this type of problem and its solution:

The marketing and product research departments of the Barker Company have proposed

Dr. Smith is manager of business policy and methods research for the Semiconductor Division of Raytheon Corp. This is the fourth in a series of articles he has written for PURCHASING Magazine on the applications of linear programming in purchasing.

that the company produce and market a 20-ounce can of dog food composed of meat and/or fish and having the following guaranteed analysis:

- At least 2 ounces of protein
- At least 0.0014 ounces of iron.
- At least 600 calories.
- Not more than 4.0 ounces of fat.

The purchasing department has been asked to determine the minimum cost of ingredients that will satisfy this analysis.

By a process of elimination the possible ingredients have been narrowed down to one type of meat and one type of fish. The analyses and cost breakdowns work out this way:

	Fish	Meat
Protein, percent	10	15
Iron, percent	0.01	0.005
Calories per ounce	20	50
Fat, percent	10	16
Price per ounce	0.25¢	0.50¢

Solving the Mix Problem

The problem is to decide what mixture of fish and meat should be used so that the requirements of the guaranteed analysis will be satisfied at minimum cost.

Considering the protein requirement first, we can express it algebraically as follows:

$$0.1 F + 0.15 M \geq 2$$

where F and M stand for the number of ounces of fish and meat to be used. This states that the protein contents of the two ingredients, 10 per cent of the fish plus 15 per cent of the meat, must be equal to or greater than 2 ounces.

It would be interesting to determine how much

fish would be required if we were not going to use any meat. As 10 per cent of the fish would have to amount to at least two ounces, the total fish required would be at least 20 ounces. Similarly, if we were not going to use any fish, it can be determined that at least 13.3 ounces of meat would be required.

These relationships may be presented graphically as in Fig. 1. Here the number of ounces of fish is shown on the vertical axis and the number of ounces of meat is shown on the horizontal axis. Any point on the graph represents a particular mix of fish and meat. For example, point A represents 12 ounces of meat plus 8 ounces of fish.

The straight line joining 20 on the F axis and 13.3 on the M axis shows the requirement for protein. Any point on, above or to the right of this line represents a mix which will satisfy the requirement for protein. Any point below the line, indicates a mix which will fail to satisfy the protein requirement. It is seen that the mix represented by point A easily satisfies the requirement for protein.

Similarly, the requirement for iron may be written as

$$0.0001 F + 0.00005 M \geq 0.0014$$

and graphed as in Fig. 2.

The requirement for calories is given by

$$20 F + 50 M \geq 600$$

and Fig. 3.

The requirement concerning fat is expressed as

$$0.1 F + 0.16 M \leq 4.0$$

This means that 10 per cent of the fish plus 16 per cent of the meat must be less than or equal to 4.0 ounces. In Fig. 4, mixtures which meet this requirement are represented by points on or below the diagonal line.

An additional requirement is that the fish and meat must add up to 20 ounces. Therefore,

$$F + M = 20$$

In Fig. 5, the mixtures which meet this requirement are only those which fall on the diagonal line.

By superimposing Figs. 1 through 5 on one graph in Fig. 6, we can see all the requirements together.

First, let us consider the fat restriction. As this line is everywhere above the weight restriction line, we know that any mixture of 20 ounces of fish and meat will have less than the specified maximum amount of fat, so the fat restriction is not critical.

Turning to the protein requirement, we see that this line is everywhere below the weight restriction line except where they meet on the F axis. Therefore, any combination of fish and meat adding up to 20 ounces will provide at least the specified minimum amount of protein.

The line giving the iron requirement intersects the weight line at Y where $M = 12$ and $F = 8$. This means that if less than 8 ounces of fish are used, the mixture will not satisfy the iron requirement.

The calorie line intersects the weight line at X where $M = 6.7$ and $F = 13.3$. This shows that if less than 6.7 ounces of meat are used, the mixture will not have sufficient calories.

We see now that the only mixtures which will satisfy the guaranteed analysis and add to 20 ounces are represented by points along the line XY. In other words, we must have between 6.7 and 12 ounces of meat with the remainder of the 20 ounces being made up by fish.

Find the Lowest Cost

With fish at 0.25 cents per ounce and meat at 0.5 cents per ounce, it is clear that we should use as much fish and as little meat as possible. The mixture which meets all requirements with minimum meat is given in Fig. 6 by point X.

The mix and cost per can of ingredients using this solution will be:

13.3 ounces of fish @ 0.25¢	=	3.325¢
6.7 ounces of meat @ 0.50¢	=	3.350
Total		6.675¢

From Fig. 6, the optimum mixture can be selected for any combination of prices for fish and meat. So long as fish costs less than meat, the solution will be given by point X. If the prices of the two ingredients were the same, any mixture along the XY line could be used. If the price of fish were higher than the price of meat, we would want to minimize the amount of fish used by selecting the mixture at point Y.

Considering again the solution at point X for the original prices of fish and meat, it would be of interest to see what the effect on the optimum mixture would be if marketing should choose to alter the original guaranteed analysis.

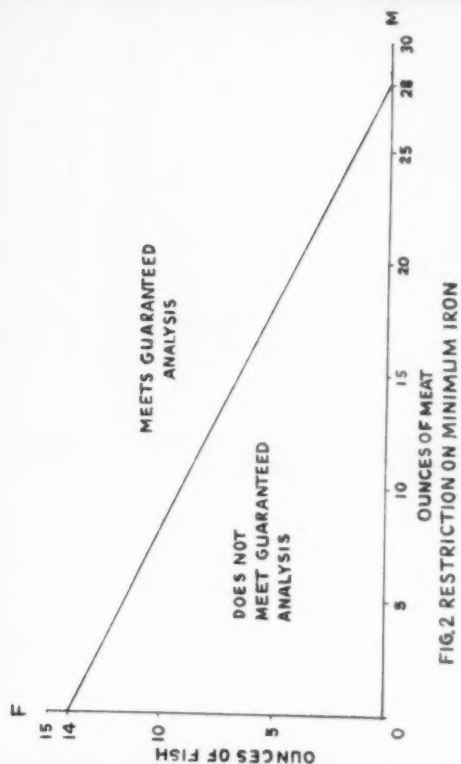
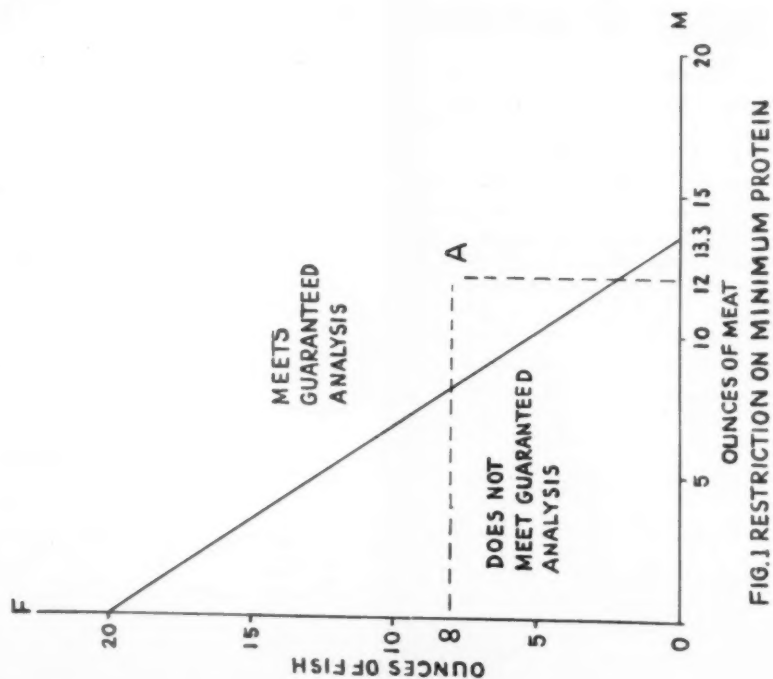
Let us say it is desired to increase the guaranteed amount of iron. The amount of iron given by the mixture at point X is 0.00167 ounces which is more than the minimum of 0.0014 ounces originally specified. So long as the proposed increase is not to a figure higher than 0.00167, the solution and cost will not be affected.

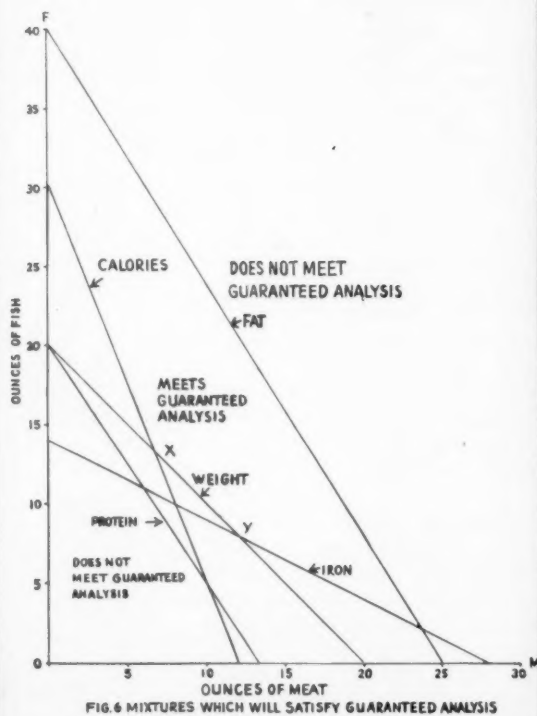
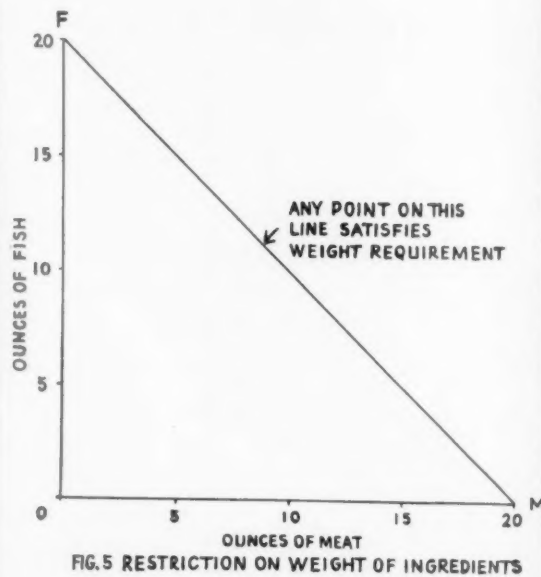
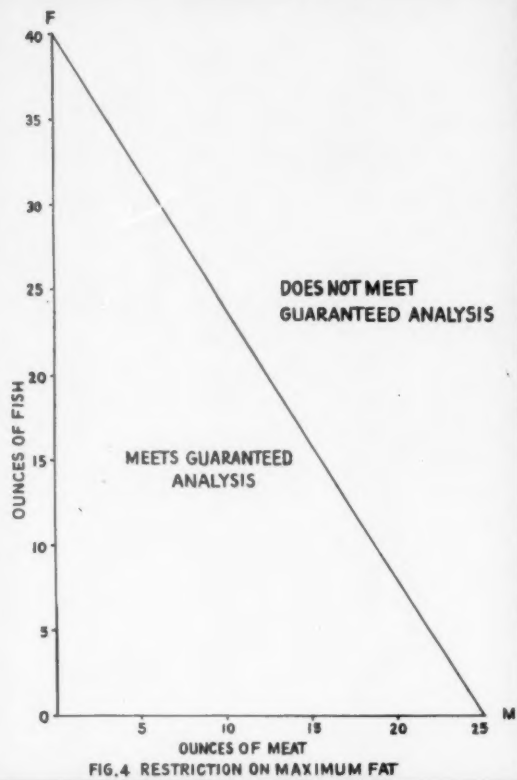
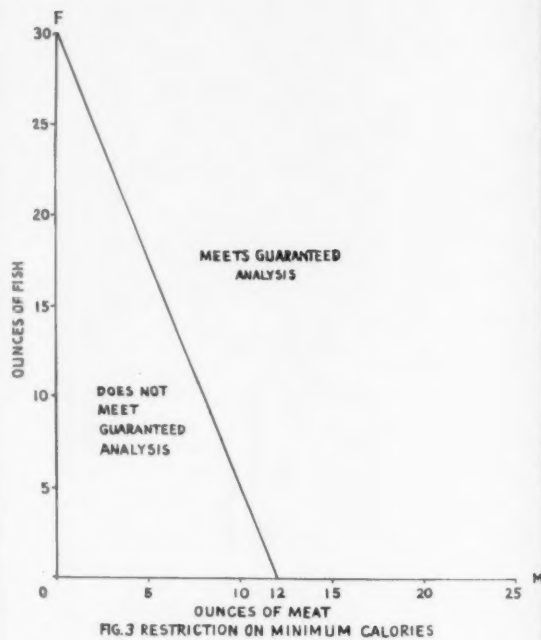
However, the only way that an amount larger than 0.00167 ounces of iron can be supplied in the 20-ounce can is to increase the amount of fish at the expense of the meat content. This would mean moving the mixture further to the left on the weight restriction line and, therefore, not meeting the minimum requirement for calories. The conclusion is that so long as the minimum requirement for calories is kept at 600, the iron requirement cannot be increased above 0.00167 ounces.

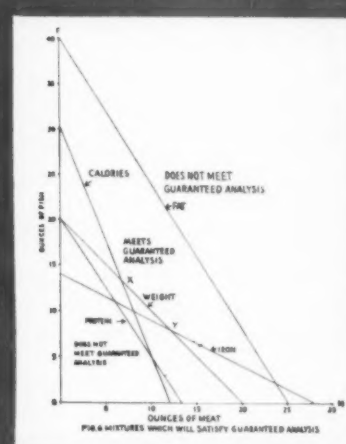
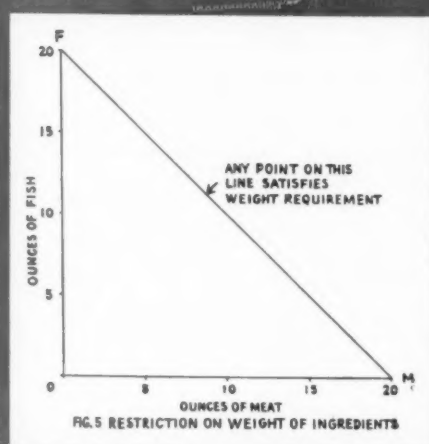
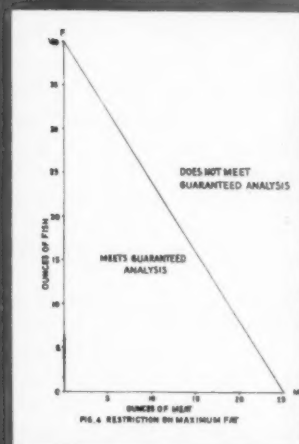
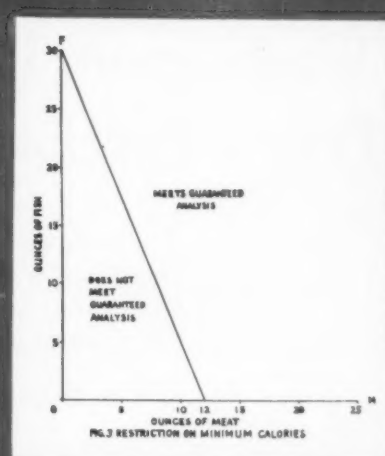
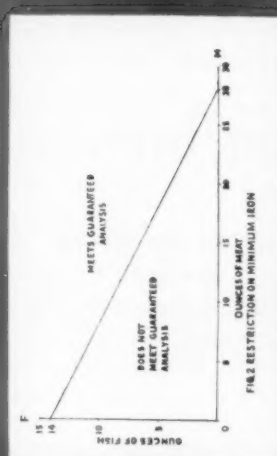
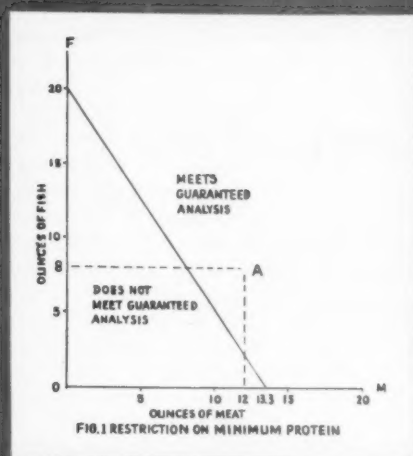
Suppose on the other hand, the marketing department was interested in increasing the guaranteed minimum number of calories. This could be done by increasing the meat content and reducing the fish content. That is, we could move the calorie restriction line to the right, thus moving point X to the right along the XY line. When we reached point Y, the calory content would be increased from 600 to 760. The meat content

Please Tear Out This Page

All the tables referred to in this article are presented on this tearout page and its reverse side. For easier reading we suggest that you remove this page so that you can refer directly to the tables as you read the article. The tables are also repeated on other pages of the article. This means that even if this tearout page is lost, the article will still be complete.







could not be increased further as the resulting mixture would not supply sufficient iron. The cost per can of ingredients at point Y would be:

12 ounces of meat @ 0.50¢	=	6¢
8 ounces of fish @ 0.25¢	=	2
Total		8¢

In revising the calorie guarantee upward, it is important to know that for every calorie the guaranteed minimum is increased above 600, the cost per can will be increased by $(8 - 6.675) / (760 - 600)$ or 0.0083 cents.

What Linear Programming Can Do

The simplified problem above has served to demonstrate some of the important questions which can be answered in mixing problems through linear programming. That is:

- For given product specifications and raw material prices, what is the optimum mix of materials to use?

- If prices change, should the mix be changed and if so, how?

- How would changes in product specifications affect the optimum mix and total cost?

Because the problem was limited to two raw materials, we were able to solve it graphically.

In a more realistic case, however, we might want to consider 50 possible raw materials and 20 restrictions on the product. Under these circumstances, an algebraic technique known as the simplex method of linear programming is used.

The simplex method is a step-by-step procedure which can be used to improve the mix until the optimum solution is obtained. The method is too lengthy to describe here, but excellent explanations written for those without special mathematical training are available in the following reference texts: R. O. Ferguson and Lauren F. Sargent, *Linear Programming: Fundamentals and Applications*, McGraw-Hill Co., Inc., New York, 1958; D. U. Greenwald, *Linear Programming*, Ronald Press Company, New York, 1957; A. Vazsonyi, *Scientific Programming in Business and Industry*, John Wiley & Sons, Inc., New York, 1958.

When large numbers of raw materials are to be considered, it is usually worthwhile from the standpoint of cost and time to have the linear programming solved on a computer. Most computer manufacturers have written programs for solving this type of problem, so further computer programming is unnecessary.

Washington, 1960— Prices, Purchasing Interest Lawmakers

Action on a number of bills affecting industrial buying is expected during the next session of Congress. Among the issues to be debated: fair trade, anti-trust moves, price increase notification, military procurement.

By A. N. Weckler

PPRICE LEVELS and inflation will be major issues during the second session of the 86th Congress, but in addition to legislation in these fields of overall interest, the Congress convening next month will consider a variety of measures of direct interest to the purchasing agent.

Most of these measures are clearly defined in bills that were introduced during the first half of the session, and which are in various stages of legislative processing. The attention of Congress, during the first half of its tenure, was focused on "must" legislation—bills which had a timetable, such as appropriations for defense and government public works and housing programs which would have ground to a halt without continuing legislation.

In the coming session, the issues will include major policy decisions—anti-trust action, fair trade, curbs on price increases, proposed increase in minimum wages, tax policies, and proposed changes in the basic law governing military procurement.

More Politics Than Usual

Speculation on how a Congress will act on proposals which are highly controversial is always risky. In the coming months, there will be other factors which make predictions even more hazardous than usual. The national elections next November tend to heighten

political considerations that are normally involved in legislation. Also, several of the outstanding contenders for nomination on the Democratic presidential ticket are members of the Senate, and this will add a further political fillip to the Congressional scene.

Several bills in the Congressional hopper cover the general area of economic stabilization, and among them are proposals which are specifically aimed at price stability.

Principal among the price bills is one introduced by Senator

Joseph C. O'Mahoney (D.) of Wyoming (**Senate Bill 215**), which requires a 30-day notice to the Federal Trade Commission and the Attorney General of a proposed price increase in any line of commerce where 50% or more of the total annual U.S. sales are made by eight or less corporations.

On the House side, Representative Henry S. Reuss (D.) of Wisconsin has introduced two bills (**H.R. 4870** and **H.R. 6263**), which propose to amend the Full Employment Act of 1946 to make

Their Bills Will Affect P.A.'s . . .



Senator Alexander Wiley (R., Wisc.) would set up a National Economic Council for Security and Progress. The group would be concerned with economic policies and other developments affecting the national product.



Senator John F. Kennedy (D., Mass.) is pushing to boost the minimum wage from the present \$1 to \$1.25 an hour. He would also broaden the coverage of the Fair Labor Standards Act in several fields.



Senator John J. Williams (R., Del.) calls for use of "competitive bidding to the greatest extent practicable in procurement by the armed forces. Senator Javits (R., N.Y.) sponsors a similar bill.

Mr. Weckler is Chief of the Washington Bureau of Conover-Mast Publications

price stability a consideration in the national full employment objective.

In one of his bills, Congressman Reuss suggests public hearings by the President's Council of Economic Advisors where price increases are proposed in industries in which "most of the output is produced by relatively few firms" or where wage increases are involved which will lead to price increases. He also recommends that factual summaries and possibly advisory statements be issued after such hearings.

The second of Congressman Reuss' bills, which is currently the active bill, calls on the President, directly or through any federal agency he designates, to hold **public hearings concerning "price increases, prospective or actual, which in his judgment appear to threaten national economic stability"**. Similar action is also called for where wage increases will lead to price increases. Under such conditions, the President is required to issue summaries of the hearings and advisory statements.

Another piece of pending legislation affecting price relationships—but not applying to control of

prices—is a bill introduced in the Senate by Senator Homer E. Capehart (R.) of Indiana (S. 138) **which clarifies the so-called "good faith" defense against charges of price discrimination** under the Clayton and Federal Trade Commission Acts.

Senator Capehart proposes to amend the Clayton Act to establish that "it shall be a complete defense to a charge of discrimination in price, or in services or facilities furnished, if the seller shows that his lower price, or his furnishing of greater services or facilities, was made in good faith to meet an equally low price of, or services or facilities of comparable value furnished, or offered by, a competitor. . . ."

In direct contrast to Senator Capehart's proposal is a bill introduced by Senator Estes Kefauver (D.) of Tennessee (S. 11). This bill is the direct opposite of the Capehart measure in that it **eliminates competitor's price as a defense under the Clayton Act**.

As an overall judgment, it is **not expected that any significant price legislation will be enacted in the coming session**. However, two developments can have a bearing that might change this outlook.

If metals prices should show any real price push as the result of the prolonged strikes, there could be pressure on Congress to do something. A second factor could be the findings of the Joint Economic Committee of Congress, which has been holding price hearings.

Suggest New Government Agency

One piece of proposed legislation that has a very broad economic focus is a bill sponsored by Senator Alexander Wiley (R.) of Wisconsin (S. 2080) which **would establish a National Economic Council for Security and Progress**. This Council would have broad functions of review and recommendation on national economic policies, trade, developing new commodities and finding new markets for an expanding national product. It would also ascertain the impact of imports on the domestic economy, and suggest action to combat Communist trade threats.

Such a measure would undoubtedly affect the interests of the purchasing agent, but there appears little support for such a

(Please turn to page 126)



Senator Leverett Saltonstall (R., Mass.) favors greater use of negotiation and performance specifications and extension of the Weapons System Management concept in military procurement.



Representative Oren Harris (D., Ark.) wants "fair trade" pricing legalized in states which do not now permit it. His bill (H.R.1253) was favorably reported by a committee last June, but never voted on.



Representative Henry S. Reuss (D., Wisc.) wants the President or agency designated by him to hold public hearings on price increases, prospective or actual, he thinks threaten national economic stability.



Senator Joseph C. O'Mahoney (D., Wyo.) would require a 30-day notice to Federal agencies of proposed price increases in industries where half or more of U. S. sales are made by eight or less corporations.



Shenango Furnace P. A. W. Alton Snyder: "If a vendor doesn't acknowledge, he doesn't get the business."

Three People Buy For Three Plants

Shenango Furnace's purchasing department buys for three locations. It can do this big job with a small staff only because of good planning.

PURCHASING Agent W. Alton Snyder, an assistant, and a secretary usually put in a good day's work at the Shenango Furnace Co., Sharpsville, Pa. These three people comprise the company's purchasing department. In an average day, they will:

Interview about 22 salesmen.

Issue 25-30 purchase orders.

Spend about \$30,000.

Process about 50 invoices.

As if purchasing didn't keep him busy enough, Snyder's responsibilities also encompass non-productive stores. Reporting directly to him is the superintendent of stores. "Having stores responsibility makes purchasing's job easier, not harder," Snyder observes. "Whenever inventories get

out of line, purchasing and stores have to work together to correct the situation," he explains. They do this best when they are unified organizationally.

In a small department, there are no extra people who can jump in when the pressure is on. So teamwork and simple procedures are absolute. Fortunately Shenango purchasing has both. The teamwork is noteworthy in relations between purchasing and other activities. The procedures are noteworthy within the purchasing department.

Purchasing and stores work together extremely well. The stores superintendent regularly confers with Snyder or his assistant. In this way stores keeps informed

on changes in lead times and purchasing knows about changes in inventory positions. Stores is extremely conscious of the need for good control. It takes a monthly physical inventory of major items.

Purchasing also tries to work closely with all production supervisors. It goes all-out to give them the best possible service and, whenever possible, will try to get them the exact type of material they prefer. Purchasing has final say on all brands, however. Salesmen know this. They rarely try to make a sales pitch to someone in the shop without first clearing the purchasing department.

Mr. Snyder isn't hardheaded about backdoor selling, however. "I want manufacturing to get the best possible materials to do the job," he declares. He always gives preference to the brands preferred by men in the shop when he makes his buy—even though he has final say on what is purchased and who the supplier will be. In addition, he encourages suppliers to bring in new products so they can be tested in the shop. Purchasing is a true service function at Shenango and Snyder does his best to give manufacturing the service it needs to do its job efficiently while keeping costs under tight control.

Well Planned Procedures

Shenango's purchasing procedures aren't complicated. But they're designed for good control. Typical is Purchasing Agent Snyder's handling of acknowledgments. He uses a separate acknowledgment copy. Nothing unusual about this, but what is different is the way he gets vendors to acknowledge.

As P. A.'s well know, many vendors are sloppy about acknowledging orders. As a result, buyers must do one of two things. They can either sit back and hope or they expedite. If they just wait, they risk being left holding the bag. If they are eager and expedite, they usually wind up making much ado about nothing.

Snyder's control of acknowledgments is simple and almost 100% effective. In bold red ink on each order is stamped the following notation: "This order is unpriced. It is valid only if you make your

price proposal on the attached acknowledgment form." In other words, if the vendor doesn't acknowledge, he doesn't get the business. It's simple and it's effective. "We have very little trouble with acknowledgments," Snyder comments.

Besides accepting the terms and conditions of the order when he acknowledges, the vendor indicates how and when he will deliver. When the buyer gets the acknowledgment he compares the promised date with the date required. Needless to say, in nine cases out of ten, the purchase transaction ends at this point. The order arrives on schedule without expediting. The three people in Shenango purchasing just don't have time to expedite more than an occasional hot order.

Have Streamlined P.O.

Shenango purchase records are also simple and straightforward. Repeat items go on traveling requisitions which double as purchase record cards. A simple purchase order file backs up this record.

Shenango's purchase order form is a combination snap-out and duplicator master. There is a seven-part snap-out form with copies for the vendor, acknowledgment, purchasing vendor file, purchasing numerical file, storeroom numerical file, storeroom alphabetical file, and requisitioner. Typing is reduced by inserting a duplicator master in the snap-out form. The master is later used to run off receiving reports.

Purchasing gets quotations with the conventional four-part snap-out form that permits inquiries to be simultaneously typed for three suppliers. Three of the copies go to the suppliers (carbons are cut out to prevent vendors from knowing who else is quoting) and the fourth copy is kept by the buyer for analysis of quotations.

Purchasing Agent Snyder offers one very good suggestion on form design: "Put your telephone number on both purchase order forms and quotation request forms. It's bound to prevent a lot of confusion—especially in multi-plant companies."

The Shenango Furnace Company
SHARPSVILLE, PA.
Telephone WIndham 5-7821

PURCHASE ORDER
No. **T 9915**

TO: _____

Ship to: SHARPSVILLE, PA.

Via: _____

QUANTITY	ITEM DESCRIPTION	PRICE
THIS ORDER IS UNPRICED. IT IS VALID ONLY IF YOU MAKE YOUR PRICE PROPOSAL ON THE ATTACHED ACKNOWLEDGMENT FORM.		

IMPORTANT: Show the above Purchase Order number on all shipping papers, packages, invoices, and all correspondence in reference to this order.

DIRECTIONS FOR INVOICING:
RENDER ALL BILLS IN TRIPLICATE and send to correct destination not later than 25th day of the month when shipment was made. When possible invoices should be mailed the same day material was shipped.
Settlement will be made 25th of the month following. No settlement will be made for material that is not received during the preceding month.
Strict compliance with the above will secure prompt settlement of account.
All invoices must be mailed to the attention of the Purchasing Agent, SHARPSVILLE, PA.

CONDITIONS:
Return our Acknowledgment and state as near as possible the date when shipment will be made.
This order must not be filled at higher prices than last quoted or stated on this order without permission.
Charge for drayage or package will not be allowed.
When price is delivered our works, PREPAY FREIGHT to destination. When delivered shipping point, ship FREIGHT COLLECT, on marking the invoice. (In no case will we surrender our original paid freight bills or secure duplicates. They are part of our records and must remain in our possession.)

THE SHENANGO FURNACE COMPANY
PURCHASING AGENT

Shenango's purchase order is specially tailored to prevent confusion. The telephone number is printed on it and there is a special warning to the vendor that he must acknowledge unpriced orders or else the P.O. is invalid.

DO NOT SEPARATE COPIES
NOTE - 1. ALL DATA IS SUPPLIED
2. COMPLETE APPROVAL ON REQUEST

FORM 6-572 5-55 P. 54

THE SHENANGO FURNACE COMPANY
SPECIAL PURCHASE REQUISITION
For Non-Staple Purchases Exceeding \$500

PURCHASING DEPT. COPY

FOR (CHECK):
☐ FOR NON DIVISION SHARPSVILLE, PA.
☐ HEBET WELD DIVISION - SHARPSVILLE, PA.
☐ HEBET WELD DIVISION - REVILLE, OHIO, PA.

INDICATE SOURCE OF SUPPLY IF KNOWN
 VENDOR: _____
 ADDRESS: _____

MATERIAL TO BE USED FOR: _____

QUOTING DEPT. _____

QUANTITY: _____

PRICE: _____

DATE: _____

DATE RECEIVED: _____

DESCRIPTION: _____

APPROVAL: _____

ACTUAL: _____

(TO BE FILLED IN BY PURCHASING DEPT. ONLY)

VENDOR: _____

ADDRESS: _____

APPROVAL: _____

ENGINEERING: _____

INSPECTION: _____

STORES: _____

RECY: _____

DEPT: _____

Whenever possible, Shenango Furnace uses traveling requisitions. But for all non-staple purchases exceeding \$500, it uses the form shown above which has four copies. Management approval is essential before purchasing is authorized to buy.

Christmas Gifts:

What Management Thinks

FOR MANY years Purchasing Magazine has publicized purchasing agents on Christmas gifts. Their policy—or several policies—have been made so clear so often that most P.A.'s think the subject is old hat.

But there are more people involved in a Christmas gift than the P.A. and the salesman. What do company presidents and other top executives think about the practice? What are they doing about it?

A recent survey by the National Industrial Conference Board among 291 manufacturing firms reveals an almost even split between those that frown on the idea and those that don't let it bother them.

Here are the statistics:

- 43% of the companies surveyed allow employees to accept Christmas gifts from outside companies.

- 16% try to discourage gifts, but don't say flatly employees can't accept them.

- 41% officially forbid the acceptance of gifts.

There's as much lack of standardization among the companies when it comes to setting a limit on the value of acceptable gifts. The modal limit among those that permit them is \$15, with some as low as \$2 and others up to \$25. A textile mill president wrote, "our purchasing agent has a rule that the department will accept no hard goods, but will accept consumable gifts (e.g., foods)." Many respondents said they followed the "one-day rule": a gift is acceptable if it can be eaten, drunk, smoked, or used up in a 24-hour period. A great majority of those who prohibit gifts don't include advertising items or such things as calendars, pencils, and

memorandum pads in the ban.

Most of the methods used to control incoming gifts are familiar to purchasing agents. These include the return of nonperishable gifts, donation of perishable gifts to local charitable institutions, thanks to the giver with a request that the company's name be removed from his gift list, and drawing for gifts by department personnel. A couple, however, are rather unusual:

"Our policy," one president says, "is that gifts may be accepted only if approved by an officer of the company. We feel that by requiring this clearance, gifts that might otherwise be accepted will be refused by our employees."

Another novel solution is used by a communications equipment maker:

"We announced that all top executives who received gifts but did not return them (or couldn't

return them) would have to bring them to the next executive meeting and others in the group would evaluate their price—which would then be paid by the recipient. . . .

"This was written up in the next issue of the employee house organ. In November of the following year, all executives and supervisors concerned wrote to the people on the outside who had been sending gifts and asked them to discontinue the practice. We think the problem has been licked."

More Blessed to Give?

Purchasing agents who have wrestled with the gift problem one way or another will be interested in the givers' practices:

- 46% give Christmas gifts to persons outside their firms.

- About 66% of those that give have an established list of recipients. Some of these are made up

(Please turn to page 132)



"Is the head buyer in?"

Buying Isn't Enough

Purchasing men can do a lot more than just a first-rate buying job. They can be the source of useful information that can help other departments do a better job.

By John Van de Water

"IF PURCHASING is just doing its job, it isn't doing enough," says Dean Boop, purchasing agent for Commercial Shearing and Stamping Co., Youngstown, Ohio. Boop believes that many purchasing men can make greater use of their broad knowledge of materials and company activities. They should use this information and act as company information center. This approach is carried right down to the buyer level at Commercial; Boop doesn't want to be the whole show by any means.

"Purchasing," says Boop, "is sometimes too restricted in its approach. If I know something about materials or equipment to suggest to another department I feel I wouldn't be doing my job right if I didn't make the suggestion."

Boop isn't concerned with fancy systems or complicated administration. His procedures are simple and efficient. He supervises just three buyers, an expeditor and two girls. But his determination to contribute to the business in the broadest way he knows means that he has to keep in close touch with both company activities and outside markets.

To do this effectively he emphasizes the functions that facilitate the flow of information. Specifically he:

- Buys and expedites all production steel himself
 - Keeps a personal file on major past jobs
 - Depends on experience, not systems
 - Makes sure his buyers have enough authority
 - Stays close to vendors
 - Holds weekly staff meetings
- Steel is the most important sin-

gle purchased item at Commercial. By handling production steel requirements himself Boop keeps up with his major market and is alert to business conditions in general.

Boop buys more than 60 different specifications of steel for three divisions: a pressed steel division which makes special steel stampings and a standard line of tank heads; a tunnel division which manufactures steel tunnel liners; and a hydraulic section which designs and manufactures hydraulic equipment for construction and mining machinery. Recent important jobs have included such items as steel siding panels for the Socony Mobil building in New York and liners for the new Boston vehicular tunnel.

"Although I'm not a metallurgist I can talk steel specs to our engineers," Boop says. "I know pricing and I can make suggestions. I think a purchasing agent should be able to suggest changes and alternates if a vendor can't meet specifications or supply the required material."

In effect Boop is material consultant for his engineering and production people. He can advise them regarding the comparative costs and availability of different steel specifications. He keeps them informed of changing lead times of other materials and components. He knows what is made from the steel he buys and how purchased parts are used in production. As do many P.A.'s, he pushes standardization whenever feasible.

Besides attending the usual meetings Boop talks informally and frequently with managers



Dean Boop: "I believe I should go a little beyond strictly buying."



"I wouldn't be doing my job if I didn't make suggestions."



"After all, the purchasing department is a natural source of information."

and employees of other departments. The company is small enough (900 employees in all) to make this possible. "P.A.'s don't go far enough in this," he says. "We all learn from these conversations. Purchasing is able to contribute a lot of information to which others don't have easy access."

Boop has had over 30 years' service with Commercial Shearing—20 as purchasing agent. During this time he has accumulated a lot of useful information. Two cabinets in his office contain files of the many special jobs on which

he has worked in the past. Some go back to the 1930's.

Engineering and manufacturing people come to Boop for old specs or job details to help engineer or estimate new ones or get repair information on purchased parts. "It makes you feel good to have people come to you for information," says Boop. "Especially if you can give them what they need."

Sometimes Boop's files provide preliminary information about what to buy or where to go for special items. When the company recently was awarded the new Boston tunnel contract Boop dug out the file of the old Boston tunnel which was built in the early 30's. This gave him a lead on how to proceed.

"Long service with a company pays off," says Boop. When he first took the P.A. job 20 years ago he did all the buying himself with the half-time help of one girl. Now he finds satisfaction in having grown with the company. His hydraulic buyer is also a thirty-year man and the other buyers have been with Commercial for a long time too.

Relies on Buyers

In Boop's opinion the thorough know-how and experience which come with long service are important factors in keeping down clerical work. He counts on his buyers being sufficiently familiar with their work so that complicated administrative controls are not necessary. Traveling requisitions are used wherever possible and paperwork is kept to a minimum.

This reliance on individual experience has its drawbacks, Boop admits. As it makes a man more valuable it also makes him more difficult to replace. "Our hydraulics buyer really knows his job and does it with minimum effort. We would need two people to replace him," he asserts.

To offset this he has initiated a training program in which he is consciously trying to develop this experience. A college graduate has been hired to do expediting work but he will be expected to do more than a routine clerical job. He will work closely with

both purchasing and plant personnel in order to gain that personal familiarity with company operations which Boop considers essential to effective purchasing. When Commercial's office equipment buyer retires in a few years Boop will start the purchasing education of another young man.

Boop is particularly concerned that his buyers have sufficient authority. He believes this is important not only for efficient operations but also to make a man happy in his job. "The front office gives me all the authority I need," he says. He in turn gives his buyers scope and freedom to do a thorough job. "But the man must know when to talk to his superior and this goes for me as well as buyers," says Boop. "He makes poor use of his authority if he doesn't bring his boss in on matters of importance."

Like most purchasing people, Boop and his staff consider vendor contact of great importance. They talk to all salesmen who call—an average of twenty a day. Boop sees five or six of them himself and makes a point of meeting all new salesmen. Over a period of time he sees all salesmen who call just to keep acquainted.

"My opinion of salesmen is high," says Boop. "They are getting better all the time. They are well-trained, know their products and present them in a down-to-

earth fashion. We learn a lot from salesmen."

Commercial's buyers know their vendors' abilities intimately. They have to because many of their purchases require close tolerances. "Although price is very important to us," Boop asserts, "we put a lot of stress on quality and production control." For this reason new vendors have to be checked carefully to see if they really understand Commercial's requirements. "When a vendor quotes exceptionally low, he usually doesn't understand our needs," states Boop. The buyer checks each point of the specification carefully with the low bidder and determines whether his plant capacity and equipment are adequate.

New vendors are also carefully investigated. Boop is proud that he has never had financial problems with any supplier and is determined to maintain this record. Retaining vendor good-will, however, can be a problem in a highly industrialized section where there is heavy competition in many lines. It's especially true of mill supplies since there are 44 houses calling on Commercial Shearing. Boop has had to limit his purchases to 16 of them. To achieve some control of this business, the accounting department prepares a quarterly statement of purchases from these vendors. By explaining his problems to the suppliers and showing them how he tries to solve them, Boop has been able to maintain good relations.

Keeps Staff Informed

In spite of good vendor relations and on-time performance, many purchasing departments fail to function as efficiently as they should because there simply isn't enough communication within the group. Boop tries to avoid this pitfall by holding weekly staff meetings. At these meetings common problems are discussed. "The meeting may take only fifteen minutes, or it may run an hour," says Boop. "If there is nothing of importance to discuss we don't waste anybody's time with trivial matters. It's an approach that has worked out very well for us."



"... On that new part we'll need a buyer code, purchase order number, date ordered, inventory classification, weekly usage, drawing number, price, week delivery is required, quantity ordered, and if you have time, buy it. . ."



The vendor relations program worked out by P. A. Kirkish depends on four elements: appreciation, attention, answers and acknowledgements.

4 Ways to Better Vendor Relations

Simple courtesy is often neglected in business. But there's nothing difficult about it, and it produces the pleasantest kind of results. This politeness program has paid off.

By F. J. Kirkish

OUR VENDOR RELATIONS program isn't very elaborate but we think it has been very successful. By trying to give a little more thought to the human factor in our dealings with vendors we have made things a lot easier for ourselves and, I am sure, for them.

We call our effort "The Four-A Program" and we think the principles on which it is built can be followed profitably by many other purchasing departments. It covers four basic areas: Appreciation, Attention, Answers, Acknowledgements. Why not review *your* attitudes toward them?

APPRECIATION: Do you take consistently good service from your "better" suppliers for granted?

We used to have a lot of trouble getting on-time deliveries. We were in the middle of a plant expansion at the height of a seller's market. But there was one large eastern company which stuck to delivery promises. We sent a letter of appreciation and promptly received a warm reply expressing thanks for an unusual courtesy. To this day we have had excellent relations with the company.

Other letters have gone to a supply house that filled rush orders promptly; an electric motor supplier who did an exceptional job in locating equipment when

we had a breakdown; a contractor (and his foreman) whose special efforts kept the cost of a job substantially below estimate. In every case it took just a little of our time to write. In every case it paid off handsomely in good will and continued good service.

ATTENTION: Have you ever tried to put yourself in the shoes of the man who calls on you? Do you give him the same consideration you'd like to get?

Salesmen calling on us are never allowed to wait unattended for more than a few minutes. If we can't see a man immediately we tell him approximately how long we'll be delayed. We apologize for long delays. We figure salesmen are human too. Maybe that's why we have little trouble with backdoor selling.

ANSWERS: Do you acknowledge correspondence promptly? Or do you wait until you "have all the answers" (and then maybe don't answer anyway)?

We are irritated by delays in replies to our letters. We have more confidence in respect for vendors who answer promptly than we do for the other type. Well, suppliers develop the same attitudes toward you, or toward accounting when their inquiries are neglected. Procrastination in correspondence, payment of invoices, etc., breeds poor relationships and discourages cooperation from suppliers.

ACKNOWLEDGEMENTS: Do

you acknowledge all quotations or do you leave the unsuccessful bidders in the dark—and perhaps eventually bitter and uncooperative?

Much of our equipment must be fabricated by outside shops—and there are relatively few of them in our area. We need them as much as they need us. We make it a point to be courteous with them.

Quotations are always acknowledged. Bidders are given at least general reasons why someone else got the job.

A lot of backbreaking work and sometimes considerable expense goes into preparing a quotation. Don't get in the habit of taking this service for granted. Not unless you want your sources to dry up.

How are *your* vendor relations?



"Can I see him now? I'm left over from this morning."

Mr. Kirkish is purchasing manager of the Westvaco Mineral Products Division, Food Machinery & Chemical Corporation, Modesto, Calif.

Delayed Deliveries: The

It's not easy to get damages when a vendor fails to deliver on time. The legal rights of the P.A. in such a situation and the remedies available to him are discussed here.

By Lyle Treadway

FAILURE OF suppliers to meet specified delivery dates can have serious consequences. Although delayed deliveries are minimized by the careful selection of suppliers, the use of adequate lead times, and good follow-up practices, the purchasing agent should know the legal rights and remedies available to him when deliveries are delayed beyond the specified time.

It is fundamental that failure to deliver on time is a breach of the contract of sale. It is difficult, however, to determine the exact time when the supplier is obligated to deliver if the purchase order or contract does not specify

a definite date. The supplier is then obligated by law, only to deliver within a "reasonable time." For this reason, it is wise for the professional buyer to specify a definite date on his order whenever he is able to determine with reasonable accuracy when the commodity or service will actually be needed. (See "How Much Fine Print Does Your P. O. Need?", *Purchasing*, March 16, 1959.)

Has Right to "Cover"

However great the losses or difficulties which result from delayed delivery, a long line of decisions has made it clear that damages for delayed delivery cannot be greater than the damages for total breach in failure or refusal to deliver at all. When delivery is not made as agreed or is

delayed beyond a "reasonable time," the buyer has the right to cancel the order, to "cover" by purchasing the goods elsewhere, and to recover from the supplier the difference between the agreed price and the cost of "cover." This is the same right which the buyer would have if the seller refused delivery altogether.

The general rule of law respecting damages for non-delivery is still said to be the difference between the agreed price and the market price of the goods at the time *when delivery should have been made*. This is the rule stated in the Uniform Sales Act, currently applicable in most states other than Pennsylvania and Massachusetts. In the latter states, and in any others which adopt the new Uniform Commercial Code, the damages recoverable by the buyer are placed on a more realistic basis. Under the Uniform Code (Sect. 2-712) much greater weight is given to the price actually paid by the buyer for the substitute goods than to the market price. The buyer is also permitted to recover his costs involved in making the purchase, such as travel and inspection costs, where necessary. As long as the buyer acts in good faith and in a reasonable manner, he can recover the difference between the cost of the substitute goods and the contract price, even though it is shown that his method of cover was not the cheapest or most effective that could have been used.

The rule that damages are

Mr. Treadway, purchasing agent for The Federal Glass Company, Columbus, Ohio, is a member of the bar in Ohio. He writes regularly on legal matters for this magazine.



On the problem of delayed deliveries, a supplier is obligated by law only to deliver within a "reasonable time." For this reason it is mandatory on important items that a buyer specify a definite delivery date on his purchase order.

Vendor Isn't Always Liable

based on the difference in price between what the buyer agreed to pay and what he was forced to pay to get the same goods elsewhere, arose from mercantile contracts. There are a vast number of old cases involving goods for resale where this damage rule is invoked. In a typical case the seller attempted to revoke his contract after the market price of goods went higher than the price at which he had agreed to sell.

"Consequential" Damages

Under present conditions purchasing agents probably have little interest in legal damages which depend on the difference between the price they agreed to pay and the price at which they can purchase elsewhere. This would seldom be an adequate remedy for the losses, actual and potential, resulting from late delivery. Often the item involved can be purchased from only one, or a very limited number of sources. The "market price," if it exists, changes very little over a period of months. The item may be specially made and purchased from another source, even if permissible under patent claims, would involve much delay. In practice, the industrial buyer is interested, instead, in the down time and production losses which may result from failure to deliver materials, parts and equipment on schedule.

This brings us to a consideration of the law of consequential damages—the rules and principles which apply to damages sustained as the direct, but secondary, result of delay in delivery, or non-delivery, of materials and services.

It should be made very clear that, through the years, the courts have not favored consequential or "special" damages. They have tended to fall back

on the old rule of "cover" explained above. Many decisions have taken the position that consequential damages are speculative and depend on special circumstances not properly chargeable to the seller of goods. One jurist compared the problem to the old tale of the horseshoe nail wherein progressively the nail, the horseshoe, the horse, the rider, the battle and, ultimately, the kingdom were lost. The court said that consequential damages, carried to their ultimate conclusion, could make the storied blacksmith liable for loss of the entire kingdom.

The modern purchasing agent could, no doubt, tell a parallel story in which a factory employing 10,000 shut down for lack of a special screw costing 98 cents. Yet, would any buyer believe that lost production of the entire factory could be charged to the vendor?—perhaps a local mill supply house which merely passed the order along to a machine shop.

It is easy to understand why consequential damages are subject to strict limitations and a strong measure of proof. It is often difficult to draw the line between direct consequential damages and those which are too remote and speculative to be legally recoverable. It is understandable, also, that court decisions have been inconsistent even in the face of similar facts.

Seller's Knowledge Required

In the recovery of consequential damages it is a long-established principle that the seller must have had knowledge of circumstances which would give rise to special damages if he failed to perform. This basic rule was laid down in the leading case of *Hadley v. Baxendale* (England, 1854) in which the court held that "if the special circumstances under which the contract

was actually made were communicated to the seller by the buyer . . . then the damages would be the amount of injury ordinarily following from breach under these circumstances." The court further stated that, without such communication, the damages must be limited to those which the seller could reasonably foresee from the circumstances.

This rule is still the law, generally, and is expressed in the American Law Institute, *Restatement of the Law of Contracts* as follows: "Compensation is given only for those injuries that the defendant had reason to foresee as a probable result of his breach when the contract was made. If the injury is one that follows the breach in the usual course of events, there is sufficient reason for the defendant to foresee it; otherwise it must be shown specifically that the defendant had reason to know the facts and to foresee the injury."

This concise statement of law merits study by the purchasing agent. It will indicate immediately that, where there is any doubt about the supplier's knowledge of intended use, the safest course is to inform the seller of any special problems concerning delivery so he will be aware of losses which might occur in event of delay. Preferably, of course, this information should be in writing. It is also important to note that this information, to be legally effective, must be given before or at the time when the order is placed. Later notice of special problems will not increase the supplier's legal obligation.

The question has been raised whether notice of probable special damages is sufficient to charge the seller with liability without evidence of assent on his part. In other words, is it reasonable to make a seller liable for large consequential damages for failure to make prompt delivery of an

item (perhaps of small value), even though he knew that such damages might result, unless he consents in advance to take the risk? This consent is difficult to determine, especially where the item is sold at a standard price.

In a well-reasoned opinion for the U. S. Supreme Court, Justice Holmes made the following observation concerning a situation where the seller did not agree to assume special damages, but knew the circumstances: "The extent of liability in such cases is likely to be within his contemplation and, whether it is or not, should be worked out on terms which it may fairly be presumed he would have assented to if they had been presented to his mind."

Consent Not Needed

Many decisions have resolved the problem of liability for consequential damages on the question of whether the special losses were "within the contemplation of the parties at the time the contract was made." The prevailing view, however, is that the seller may be liable for special damages if he knows, or has reason to know, of circumstances giving rise to the loss, even though he did not specifically consent to the added risk.

In a North Carolina decision, it appeared that a buyer who op-

erated a lumber mill obtained a contract to manufacture and sell 25,000 strawberry crates. The defendant accepted the buyer's order covering repair to steel rolls of a veneering machine to be used in making these crates, the order specifying delivery within three weeks. Failure to deliver and install the repair parts as specified resulted in loss of the contract by the buyer who then brought suit against the seller for the resulting loss of profit.

In holding for the buyer, the court permitted the introduction of oral evidence that the seller had knowledge of the crate contract and allowed the buyer to show his estimate of lost profits.

In another interesting case, the buyer ordered in December 1942 four "refiners" to recondition used rubber. Two of these were delivered in August 1943, but proved to be defective. The other two were not delivered until September 1945 after the wartime market for reconditioned rubber had come to an end. It appeared in evidence that the buyer had expended \$3,000 for foundations for these machines and had also purchased a stock of used rubber to be processed. There was also ample evidence that the buyer informed the seller of his plans at the time of the purchase and that the seller was

well aware of the fact that reclaimed rubber would have a good market only while emergency conditions prevailed. The buyer rejected delivery of the last two units and counterclaimed for the cost of erecting foundations.

Here, again, decision was for the buyer, with the court making the observation that the proper measure of damages was "the sum which would restore the buyer to the position he would have been in had the seller performed" which "would be the prospective net earnings of the refiners."

Loss of Profit

Where the buyer claims loss of profit as the result of delay in delivery the cases make it quite clear that a strict measure of proof is required in showing the amount of such prospective profits. In fact, many cases categorically deny damages based on profits because they are regarded as too uncertain and speculative, depending upon too many factors such as business volume, prices, efficiency, salaries, availability of labor, etc. For example, recovery for lost profits was denied in an Ohio case where damages were claimed by a saw mill because of late delivery of saw blades. Likewise, late delivery of machinery ordered to be rented to others was held not to constitute a basis for recovery of lost profits because they were too speculative and uncertain.

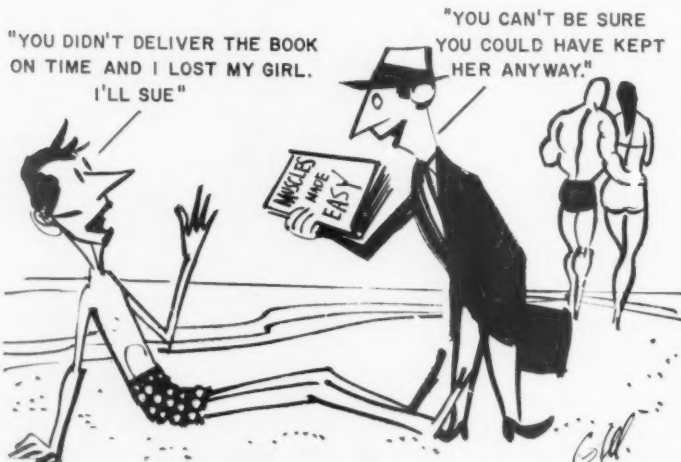
There is much authority on both sides of the question, but the preponderant view seems to be that loss of profit can be taken into consideration as an element of damages for delay in delivery of the buyer's order, provided it is reasonably proven that there would have been a profit and evidence is introduced to show with reasonable accuracy the probable amount of profit.

Price vs. Loss

A number of cases have come before the courts on the question of whether damages may exceed the total purchase price of the items on which delivery was delayed. Very understandably, a supplier feels much abused if he

(Please turn to page 124)

For More Information about ad on facing page write No. 246 on Inquiry Card—pg. 32—



In the case of consequential or special damages stemming from a supplier's failure to deliver on time, it is a long established principle that the seller must have had knowledge of the circumstances that would cause special damages if he failed to perform. The court also holds that damages must be limited to those which the seller could reasonably foresee from these circumstances.

GENERAL ELECTRIC ANNOUNCES . . .

another G-E

development

New Custom '8000'* Motors

PROJECT '8000' . . . a major General Electric program of research, redesign, advanced manufacturing and improved customer service on A-c motors 150 to 6000-hp.

*Trademark of General Electric Co.

CUSTOM DESIGNED . . . New General Electric Custom '8000' motors are built specifically to meet your requirements. Selecting from specially designed enclosures, advanced insulation systems, custom-designed end shield and bearing constructions, and more than 15 custom-designed accessories—plus a countless number of electrical designs—General Electric engineers will create a motor to meet exacting needs, provide initial and continuing economy, and give long, reliable service. Turn page for features of new Custom '8000' motors.



NEW CUSTOM '8000' MOTORS GIVE TOP PERFORMANCE WITH LESS MAINTENANCE . . . HERE'S WHY

GENERAL  ELECTRIC



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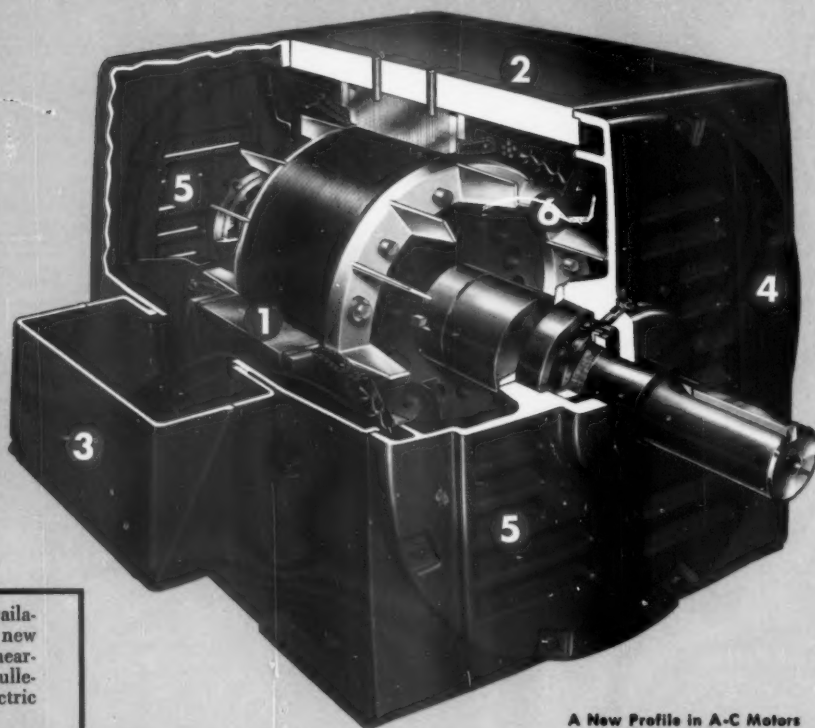
development

FROM GENERAL ELECTRIC . . .

NEW Custom '8000'* Motors Give Greater Reliability Require Less Maintenance

- 1 **LONGER INSULATION LIFE**—Pre-wound core allows closer quality control and gives longer insulation life through improved varnish impregnation or silicone rubber encapsulation.
- 2 **BETTER CONSTRUCTION**—Cast iron frame withstands 20G simulated transportation shock tests; resists corrosion.
- 3 **FASTER INSTALLATION**—Conduit box has up to 3 times volume of ordinary boxes; lifting lugs, cast to frame, hold up to 12 times motor weight.
- 4 **EASIER MAINTENANCE**—Flat end shields are more adaptable to addition of accessories or modifications; are lighter—easily handled by one or two men.
- 5 **BETTER COOLING**—Double-end ventilation, new duct design and louvred air openings provide more efficient air distribution through motor, reduce hot spots.
- 6 **LOWER NOISE LEVEL**—Sound power has been cut up to 50% by redesigning frame sections, rotor fans, air deflectors and intakes.

FOR COMPLETE INFORMATION and availability dates about General Electric's new Custom '8000' motor line, contact your nearby Apparatus Sales Office, or write for bulletin GEA-6865, Section 884-2, General Electric Co., Schenectady, N. Y.

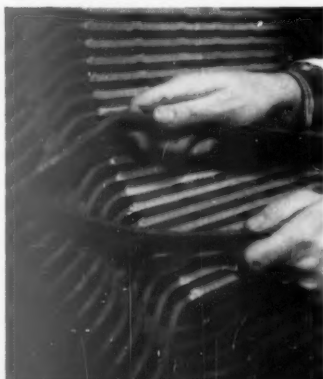


A New Profile in A-C Motors
150 to 6000-hp

NEW *Polyseal*® SILICONE RUBBER INSULATION SYSTEM IS AVAILABLE ON CUSTOM '8000' MOTORS

Silicone rubber used in Polyseal insulation systems is a product of General Electric's Silicone Products Dept., Waterford, N. Y. . . a leader in research, development, and manufacture of silicone materials. Supported silicone tape is a development of General Electric's Insulating Materials Dept., Schenectady, N. Y. Com-

bining silicone rubber with dacron-glass supporting materials is a major engineering advancement, giving this material both the mechanical and dielectric strength required for use as a motor insulation. Polyseal insulation systems are available *only* on General Electric motors. Medium AC Motor & Generator Dept.



FORM-WOUND MOTORS

Polyseal supported silicone rubber insulation system provides greater mechanical, thermal, voltage and environmental endurance than unsupported silicone rubber. Glass fabric materials are imbedded in each layer of silicone tape, which, after coil wrapping is vulcanized under heat and pressure to seal the system against moisture and contaminants. General Electric form-wound open motors with Polyseal insulation system can be used in some severe atmospheres formerly reserved for totally-enclosed motors.



RANDOM-WOUND MOTORS

Polyseal silicone insulation system offers greater flexibility and better heat transfer than existing encapsulations . . . it operates effectively from -90C to 200C and will not crack under excess thermal cycling or severe moisture. After receiving G.E.'s standard random-wound insulation treatments, Polyseal insulation is applied to stator and end turns, completely sealing windings with a thin, waterproof, inert covering which protects against extreme moisture, most chemical fumes, dust and corrosion.

*Trademark of General Electric Co.

Progress Is Our Most Important Product

GENERAL  ELECTRIC

6 of the best in finishing chemicals for the metalworking industry!



Amchem Alodine—for improved corrosion resistance and paint bonding of aluminum. Write for Bulletin 1424B.



Amchem Granodine—protects iron and steel from corrosion, firmly bonds paint finishes. Write for Bulletin 1380A.



Amchem Granodraw—improves drawing and cold forming of steel and stainless steel. Write for Bulletin 1437.



Amchem Rodine—pickling acid inhibitors reduce acid consumption, save steel. Write for Bulletin 1381A.



Amchem Cuprodine—produces bright, adherent copper coatings on carbon and stainless. Write for Bulletin 1448.



Amchem Lithoform—promotes excellent paint bonding of galvanized iron, zinc and cadmium. Bulletin 1447.

Amchem produces a complete line of finishing chemicals to prepare, protect and beautify your products. Write for complete guide contained in Bulletin 1413B. Address Ambler 15, Pa.



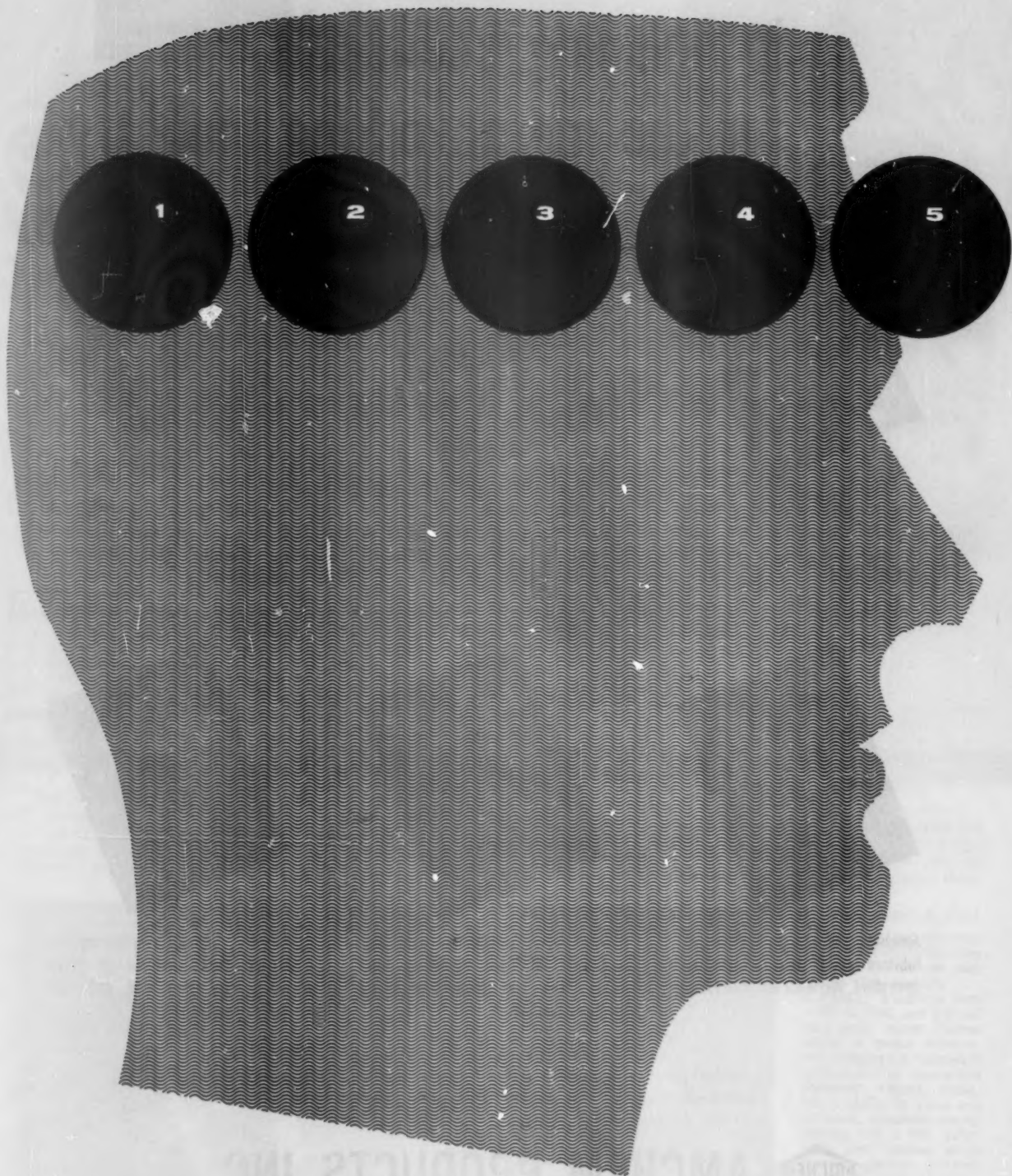
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(Formerly American Chemical Paint Co.)
AMBLER 15, PA.

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Best of the best



ANCHOR PRODUCTS, INC.



ANCHOR PRODUCTS, INC. is a leading manufacturer of high quality, durable, and reliable products. Our products are designed to meet the needs of a wide range of applications, from industrial to consumer. We are committed to providing excellent customer service and support.

count to ten . . .
and then
scream



That shipment of high temperature alloys hits your receiving dock. Everything goes great. No production headaches. No kicks from the field. Your wife looks several years younger and the dog doesn't growl at you any more.

You reorder from the same company. Still no problems . . . except you can't stop smiling while you shave. All told, you get nine separate shipments from this source. You're beginning to think high temperature alloy problems are the fantasies of fools.

So you place order number ten. Same supplier. Same grade. Same everything . . . except *this* lot fails to get by the eagle eye of your inspector. You've got a real procurement problem. Schedules suffer. Now your wife looks twenty years older and the dog snaps at your heels and you would trade your favorite putter for a high temperature alloy you can count on.

Carpenter hasn't come up with a cure for all your woes, but we have perfected a revolutionary new steelmaking process which minimizes variations from lot to lot. Called the MEL-TROL® process, it features a patented mold which reduces segregation of harmful impurities during solidification of the ingot. Result: you get clean, sound, tough metal from surface to centerline . . . in every bar . . . every time you order.

Now predictable performance is yours for the asking.

***Carpenter* steel**

- tool and die steels
- stainless steels
- electronic, magnetic and electrical alloys
- high temperature alloys
- special-purpose steels
- tubing and pipe
- fine wire specialties



*The Carpenter Steel Company, Main Office and Mills, Reading, Pa.
Alloy Tube Division, Union, N. J.
Webb Wire Division, New Brunswick, N. J.
Carpenter Steel of New England, Inc., Bridgeport, Conn.
For More Information Write No. 202 on Inquiry Card—Page 32*

Fast, Accurate Shape Cutting Possible With New Machine

A NEW EIGHT-FOOT automatic gas cutting machine of pantograph design is the latest addition to a line of shape cutting machines manufactured by the Air Reduction Company. The machine, known as the Linagraph, is able to cut straight or intricately shaped parts up to 96 inches wide by any length. Usable length can be extended by adding ten-foot sections to the cutting and tracing table tracks.

A major feature of the Linagraph is its centralized operator control. All controls for gas pressure, motorized torches, machine carriage, and tracing device are located above the tracing table within easy reach of the operator. Besides simplifying the machine's operation, the compact arrangement of the tracing area and carriage in the same space cuts down on the floor area needed for installation.

The machine is equipped to carry a maximum of four motor-

ized torches for use with acetylene, propane, or natural gas. Torches can be raised or lowered either simultaneously or individually and may be set in angular position parallel or perpendicular to the torch bar or in compound angles. All power is supplied by 110 volts a-c motors.

The torches and torch bar are suspended from a freely moving finely balanced pantograph which in turn is mounted on a separately powered carriage. In this design the tracer device moves only the pantograph, not the entire assembly. The carriage, independently driven by its own motor, is actuated by limit switches whenever the pantograph arms reach the fully open or closed positions. According to the manufacturer this arrangement, by minimizing friction and limiting the load on the tracer drive, assures more accurate and reliable performance of the cutting mechanism.

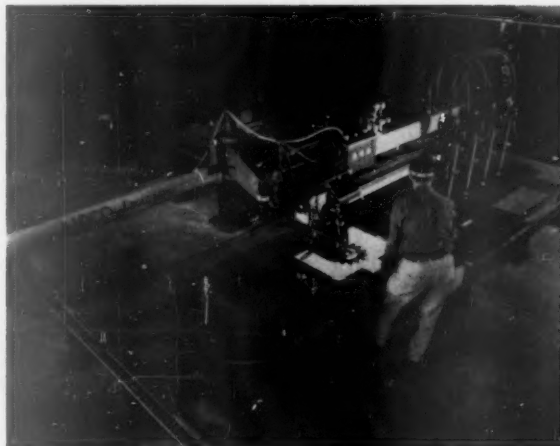
Manual, magnetic, or two kinds

of electronic tracer attachments are available. In fully automatic operation an electronic tracer scans the template optically and by means of a servo system steers the tracing head around its edge. At the same time, the cutting torches, guided by the pantograph, cut matching parts from the steel.

One electronic tracer model scans the edge of a black template on a white background. The second type scans a black line.

Capable of cutting steel plate up to 12 inches thick, the machine will have application in any plant which needs to cut steel accurately on a production basis. Typical uses would be in the shipbuilding, steel fabrication, automotive, farm machinery, and machine tool industries.

The Linagraph can be set up for either right- or left-hand operation. A package unit includes carriage, torches, control mechanisms, tracing table, structural parts, and running track.



Four parts can be cut simultaneously from a single template. Machine has centralized controls.

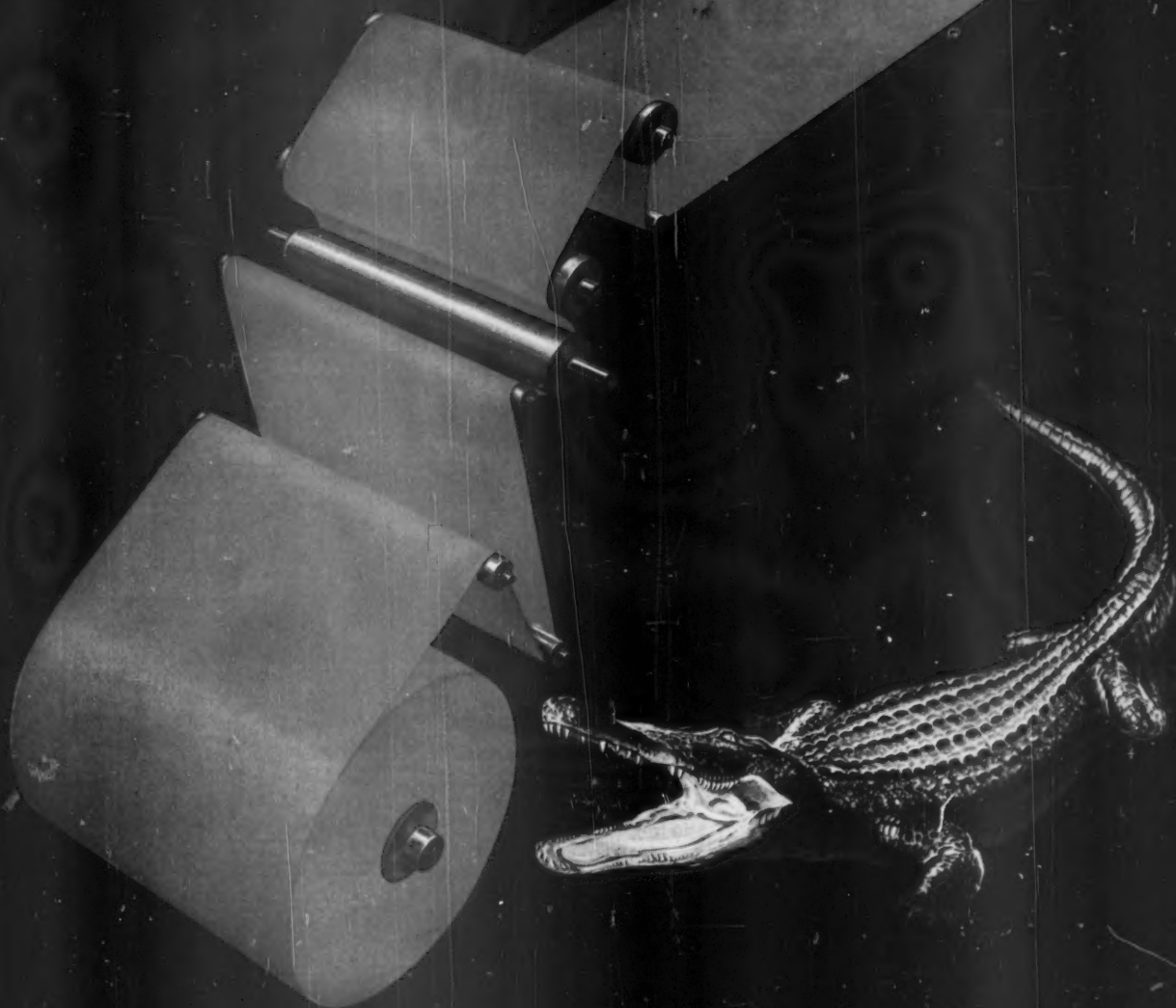


Closeup of the torch assembly shows accuracy and clean edges of cut parts.

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PURCHASING

AUTOMATIC WRAPPING



What makes **GATOR HIDE**® the world's most widely used wrapping paper?

Two factors explain Gator Hide's long-standing popularity for automatic machine wrapping—1. full yardage and 2. consistent high quality.

This wrapping paper always measures up to specification. There's no waste. And you can always *depend* on it.

Gator Hide kraft is made from 100% virgin sulphate pulp. It's tough. Rugged. Built to take

the tensions of high-speed automatic wrapping.

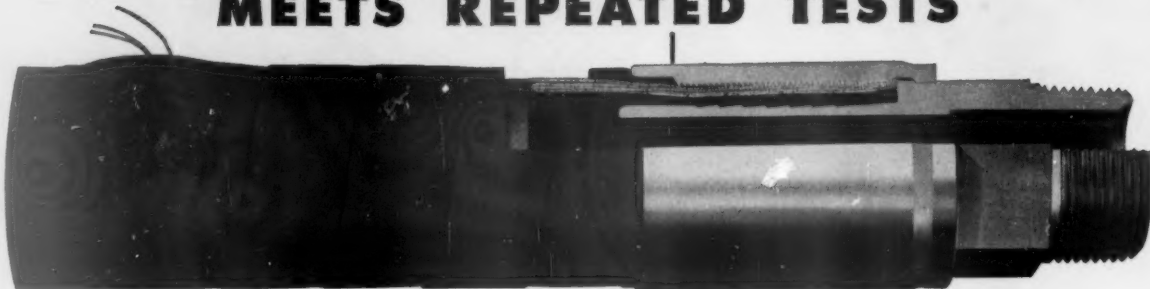
Leading paper merchants throughout the country stock Gator Hide kraft, and together with International Paper's own specialists, stand ready to help solve your every wrapping problem without obligation.

It pays to standardize on Gator Hide kraft from International Paper—"Your most dependable source of supply."



Southern Kraft Division **INTERNATIONAL PAPER** New York 17, N. Y.

Eastman APPLICATION MEETS REPEATED TESTS



Tests prove that Eastman couplings applied to super high pressure 4-ply spiral wire hose assure successful assemblies. Couplings hold well above minimum burst pressure.

PERMANENTLY ATTACHED COUPLINGS PROVIDE BOND STRONGER THAN HOSE ITSELF!

Increasing demand for greater power brought about the use of higher pressures in hydraulic systems. This not only calls for greater hose strength, but far more critical engineering in coupling design and application.

EASTMAN is contributing toward the development of the trend toward higher pressures—not only in the design and application of coupling to hose—but in the more exhaustive tests required to assure adequate safety under high pressure operations.

The actual photo above is typical of many tests in Eastman laboratories proving that the hose did not fail at the coupling—demonstrating that the coupling was designed and applied to form a bond which was stronger than the hose itself.

If you have an application requiring higher pressures, let our engineering department demonstrate the superiority and economy of Eastman applications, and quote on complete Hydraulic Hose Assemblies.

Eastman
first in the field

MANUFACTURING COMPANY
Dept. PM-12
MANITOWOC, WISCONSIN



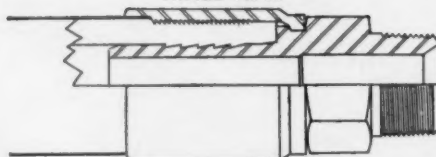
WRITE today for your copies —

Technical Bulletin 100—Medium Pressure Hose and Tube Assemblies, Couplings and Fittings for One Wire Braid Hose.

Technical Bulletin 200—High Pressure Hose and Tube Assemblies, Couplings and Fittings for Multiple Wire Braid Hose.

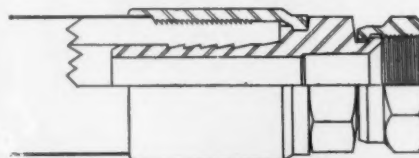
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MALE NPTF



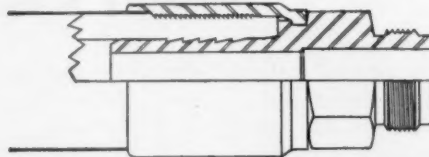
Catalog No.	Hose I.D.	Hose O.D.	Coupling I.D.	Min. Burst Pressure (P.S.I.)	Max. Wkg. Pressure (P.S.I.)
8412-12M	3/4	1 1/4	1 1/2	20,000	5,000
8416-16M	1	1 3/4	2 1/2	16,000	4,000
8420-20M	1 1/4	2	2 3/4	12,000	3,000
8424-24M	1 1/2	2 1/2	3 1/4	10,000	2,500

SWIVEL FEMALE JIC-37°



Catalog No.	Hose I.D.	Hose O.D.	Coupling I.D.	Min. Burst Pressure (P.S.I.)	Max. Wkg. Pressure (P.S.I.)
8412-12FH	3/4	1 1/4	1 1/2	20,000	5,000
8416-16FH	1	1 3/4	2 1/2	16,000	4,000
8420-20FH	1 1/4	2	2 3/4	12,000	3,000
8424-24FH	1 1/2	2 1/2	3 1/4	10,000	2,500

MALE JIC-37°



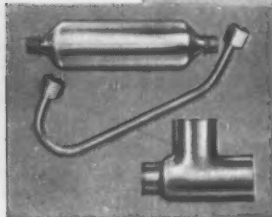
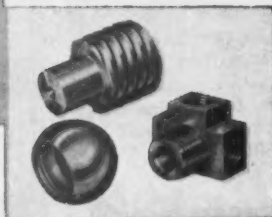
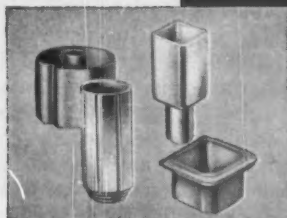
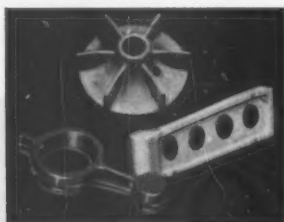
Catalog No.	Hose I.D.	Hose O.D.	Coupling I.D.	Min. Burst Pressure (P.S.I.)	Max. Wkg. Pressure (P.S.I.)
8412-12MH	3/4	1 1/4	1 1/2	20,000	5,000
8416-16MH	1	1 3/4	2 1/2	16,000	4,000
8420-20MH	1 1/4	2	2 3/4	12,000	3,000
8424-24MH	1 1/2	2 1/2	3 1/4	10,000	2,500



ONE DEPENDABLE SOURCE for all your fabricated metal parts

only **MUELLER BRASS CO.** offers *all these metal fabricating methods* to assure you the best product at the best possible price

To obtain the desired physical and design requirements in a part at the lowest unit cost, there is usually one specific process by which that part can be most successfully and economically manufactured. Because the Mueller Brass Co. offers all these methods of production, you get sound engineering, the best method of fabrication and the assurance of getting the best product at the lowest cost. Sales and engineering service is available to you at Mueller Brass Co. offices throughout the United States. Make Mueller Brass Co. your one dependable source for all your fabricated part needs.



forgings

The Mueller Brass Co. is the world's largest producer of brass, bronze and aluminum forgings.

impact extrusions

The Mueller Brass Co. now offers "Cold-Press" non-ferrous and ferrous impact extrusions. Flexible new facilities makes practical either long or short production runs of simple or complex shaped parts on an economical basis.

screw machine products

The Mueller Brass Co. maintains one of the largest automatic screw machine departments in the country, specializing in the manufacture of non-ferrous parts . . . completely equipped to perform secondary operations.

powder metal parts

Precision ferrous and non-ferrous powder metal parts are available from Mueller Brass Co. through its subsidiary, The American Sinter Corporation.

castings

The Mueller Brass Co. has a modern foundry equipped to produce quality brass and bronze castings to your specifications.

formed copper tube

The Mueller Brass Co. offers complete facilities for producing formed copper tube shapes and assemblies to the most demanding tolerances.

also producers of:

Super Cutting Red Tip Brass Rod • Aluminum Extrusions • Aluminum Sheet, Coil and Strip • Plastic Pipe and Fittings • Copper Tube and Solder Type Fittings.



MUELLER BRASS CO. PORT HURON 30, MICHIGAN

For More Information Write No. 205 on Inquiry Card—Page 32

DECEMBER 21, 1959

260

93

Long-life brushes for IMMERSED FUEL PUMP operation

It's one thing for a brush to combine excellent commutation with long life under normal atmospheric conditions . . . and something quite different to do this when immersed in gasoline or in gas-fume atmospheres. These little Stackpole brushes for 12-volt automotive fuel pumps do the job nicely—and were the first brushes to meet the exacting requirements involved.

Quick-filming brushes for IMMEDIATE HIGH ALTITUDE performance

No earth-surface break-in run is needed to assure satisfactory operation for Stackpole Quick-Filming high-altitude aviation brushes. They provide excellent and immediate commutation from no load to full load; from minimum speed to overspeed; and through zooming transitions from sea level to high altitudes. Life is eminently satisfactory, stability excellent. Low friction coefficient reduces brush operating temperatures and improves overall efficiency.

...better brushes for difficult applications

These milestones in better brushes for unusual conditions are typical of Stackpole brush progress along many lines. Equally important in their respective fields, are Stackpole brush developments for diesel-electric equipment, fractional horsepower motors, silicone-insulated motors, electro-plating generators, heavy-duty motors and others. For prompt brush recommendations, send details of your application to: STACKPOLE CARBON COMPANY, St. Marys, Pa.

STACKPOLE BRUSHES

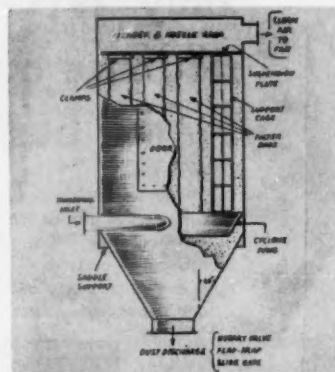
for all rotating electrical equipment

Contacts • Bearings • Graphite Chemical Anodes • Grounding Anodes • Power Tube Anodes • Seal & Clutch Rings • Voltage Regulator Discs • Heating Elements • Friction Segments • Ceramic Magnets • Ferromagnetic Cores • Fixed & Variable Resistors . . . and many other carbon, graphite and metal powder products.

For More Information Write No. 206 on Inquiry Card—Page 32

Products

New Self-Cleaning Dust Collector



A new self-cleaning dust collector which has no moving parts features automatic filter tube cleaning and constant air flow. Unit receives dust-laden air through tangential cyclone ring; heavier materials are immediately dropped to prevent overloading of filter tubes, and lighter materials are collected on outside of tubes. Compressed air cleanses the filter tubes regularly, prolonging life and increasing efficiency. Available in 6 standard sizes with 2000 to 12,000 CFM, for mounting on floor or ceiling. Flex-Kleen Corp., 406 S. Plymouth Ct., Chicago 5, Ill.

Write No. 18 on Inquiry Card—Page 32

New Line of Water Coolers



Water coolers in a new line contain a separate inside cabinet which houses the entire refrigeration system. This compact, self-contained unit gives longer life,

(Please turn to page 98)

PURCHASING



If you're in this area...

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AMMONIA, ANHYDROUS—Commercial and refrigeration grades, in tankcars or tank trucks only.

SULFURIC ACID—All strengths from 60° Baumé to 40% oleum. Also electrolyte grade meeting federal specifications. Tankcars or tank trucks only. Three U.S.I. plants—at DeSoto, Kansas; Dubuque, Iowa; Tuscola, Illinois—produce sulfuric acid.

Remember, too, that Technical Service is more than a catch phrase at U.S.I. For well-informed help on materials and applications, call collect, Heavy Chemical Sales, U.S.I.—New York office—Oxford 7-0700.

For More Information Write No. 207 on Inquiry Card—Page 32

DECEMBER 21, 1959

U. S. Industrial Chemicals Co.
Heavy Chemicals Sales Dept.
99 Park Avenue, New York 16, N. Y.

Please place me on your list to receive future information on U.S.I. heavy chemicals.

I manufacture _____
I use ☐ Ammonia
☐ Sulfuric Acid
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Position _____
Company _____
Address _____
City _____ State _____



INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
99 Park Ave., New York 16, N. Y.
Branches in principal cities

For More Information about ad on following page Write No. 208 on Inquiry Card—pg. 32→

General Electric Announces Newest In The Complete Line Of Adjustable-Speed Drives

PARMATIC SPEED VARIATOR...newest in General Electric's complete line of packaged adjustable-speed drives... provides greater machine flexibility, better quality control, higher output and efficiency.

STATIC POWER

for less maintenance, less downtime, added profit. New excitation and power conversion systems have no rotating parts. Sealed silicon rectifiers and saturable reactors need no warm-up, virtually eliminate power unit maintenance.

25% SMALLER

for easier installation. Reliable, long-life G-E components are factory assembled in compact, space-saving power unit, wired and tested before installation to assure accurate control, reduced installation time and expense.

50% LIGHTER

for lower shipping and handling costs. New Speed Variator meets industry's demand for lighter, more powerful drives—packs more power, weighs 50% less than other drives of comparable rating, 2000 lbs less in 100-hp ratings.

STATIC EXCITER with silicon rectifiers for motor field excitation and control power.

AMPLISTAT REGULATOR with adjustable acceleration and deceleration.

OPERATOR'S CONTROL STATION

KINAMATIC D-C DRIVE MOTOR

SATURABLE REACTORS are virtually impervious to moisture and dirt, require no maintenance.

FIELD PROVEN

by two years' impressive on-the-job performance in several hundred installations in 15 industries. Experience indicates high operating efficiency, lower cost installation and maintenance for a greater return on your investment.

- **GOOD SPEED REGULATION:** 5% with 100% load variation. Closer regulation available with modification.
- **WIDE SPEED RANGE:** Standard Parmatic Speed Variator provides 8 to 1 range or wider if required.
- **RESISTS CONTAMINATION:** Saturable reactors and hermetically sealed rectifiers resist dirt and moisture.
- **QUIET AND VIBRATIONLESS:** New power unit design eliminates noise and vibration—expands drive versatility.

Limitations: G-E Kinamatic Speed Variator with motor-generator set is recommended for applications requiring power absorption for stopping or overhauling loads. For more information, call your General Electric Sales Engineer, or write for GEA-7012, Section 821-1, General Electric Company, Direct Current Motor and Generator Department, 3001 East Lake Road, Erie, Pennsylvania.

GENERAL  ELECTRIC

Aico

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coordinated facilities for molding all types of plastics under one roof **saves time, cuts costs**

AICO is a veritable one-stop shopping spot for all your molded plastics needs. At **AICO** you will find skilled technicians whose long and specialized experience keeps each job "on schedule" every step of the way . . . from design, through mold building, molding, final inspection and deliv-

ery. Regardless of molding material, molding method required or quantities involved . . . **AICO** is equipped to do the entire job. Under one roof, at **AICO**, you will find completely coordinated facilities to assure fast, economical production of all your custom molded plastics.

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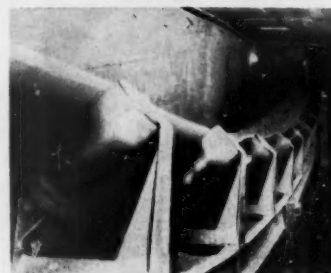
Products

(Continued from page 94)

permits more convenient installation and is easily removed for factory service or replacement without dismantling. Coolers provide instantaneous cooling of fresh water drawn through seamless copper coils, with reserve capacity for peak requirement. Available in various capacities and styles. **Sunroc Corp., Div. P. C., Glen Riddle, Pa.**

Write No. 19 on Inquiry Card—Page 32

Conveyor Belt for 45 Degree Idlers



A heavy-duty conveyor belt is particularly adapted for operating over 45 degree troughing idlers. Uniquely constructed belt is guaranteed to carry all materials without ply separation and belt failure. Principal advantage in use of 45 degree idler design is increased carrying capacity of the belt, ranging as high as 60%. Less space is required, and initial cost is lower because narrower belts and conveyor equipment will haul the same loads as larger belts on 20 degree idlers. **Manhattan Rubber Div., Raybestos-Manhattan, Inc., Passaic, N.J.**

Write No. 20 on Inquiry Card—Page 32

New Non-Acid De-Scaler Cuts Costs

A new organic chemical de-activates scale from boilers, heat exchangers, condensers, pipelines and refrigeration coils at sharply reduced costs. Non-acid product is practically odorless, non-toxic, non-flammable and non-corrosive. It can be used safely and conveniently without special protective clothing. For normal de-scaling, 1 gallon of product is added to 6 gallons of water and circu-

(Please turn to page 103)

For More Information Write No. 209
←on Inquiry Card—Page 32

For More Information about ad on facing page
Write No. 210 on Inquiry Card—page 32→

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and FASTEST
Production Tool
for Metalworking!**



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ANOTHER DEVELOPMENT OF BEHR-MANNING CO.

TROY, NEW YORK

A DIVISION OF NORTON COMPANY



METALITE 101 Discs and Belts come with "built-in zip" to speed production



Here is the perfect disc
for roughing or
cutting down projections
such as weld beads.

**TYPE 101
METALITE FIBRE**

Discs run cool —
giving fantastic
mileage.

Want to lick high finishing costs? . . . try the new **TYPE 101 RESINALL METALITE Cloth Belts** for uniform grinding and faster finishing. Ask your **BEHR-MANNING** representative for a free demonstration . . . or write for information to **Dept. IA-10.**



BEHR-MANNING CO.

TROY, NEW YORK

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BEHR-MANNING PRODUCTS: Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes • Floor Maintenance Products
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In Canada: Behr-Manning (Canada) Ltd., Brantford. • For Export: Norton International, Inc., Troy, New York, U. S. A.



Only

IRIDITE®

Process Engineered

Chromate Conversion Coatings

Give you 5 additional benefits for Corrosion Protection—Paint Base—Decorative Finishing

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Developed for specific applications, there is an Iridite to provide the finish you desire, fit the equipment you have available and give the performance you require. Most Iridite coatings meet rigid military and civilian specifications.

2 EXPERIENCED TECHNICAL SERVICE

Our large field engineering staff is thoroughly familiar with chromate conversion coatings and related finishing operations. They'll help you check every step in your finishing operation to make sure you're getting the best possible finish on your products.

3 PRODUCT AVAILABILITY

Warehouses located in strategic industrial

areas enable us to provide you with fast, economical delivery on any Iridite.

4 ECONOMY

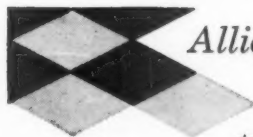
The superior performance of Iridite provides low final cost by extending operating life and lowering maintenance costs. In addition, Iridite gives you a finish that adds considerably to the value of your product. There's an Iridite to meet every cost and performance requirement.

5 RESEARCH AND DEVELOPMENT FACILITIES

If you have an unusual application, we will gladly work with you. Our entire staff of experienced engineers and chemists, and our completely equipped facilities are at your service.

IRIDITE—a specialized line of chromate conversion coatings for non-ferrous metals. Apply by dip, brush or spray methods — at room temperature — manually or with automatic equipment. Forms a thin film which becomes an integral part of the metal. Cannot chip, flake or peel. No special equipment, exhaust systems or specially trained personnel required.

If you are using chromate conversion coatings to finish zinc, cadmium, aluminum, magnesium, silver, copper, brass or bronze — consider the above benefits of Iridite. For complete information, contact your Allied Field Engineer. He's listed under "Plating Supplies" in the yellow pages. Or, write for **FREE TECHNICAL DATA FILE**.



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4004-06 EAST MONUMENT STREET • BALTIMORE 5, MARYLAND
BRANCH PLANT: 400 MIDLAND AVENUE • DETROIT 3, MICHIGAN
West Coast Licensee for Process Chemicals: L. H. Bulcher Co.

For More Information Write No. 211 on Inquiry Card—Page 32



Photograph by Bruce Davidson

HARRY SUMNER AND THE 20,000-MILE RELAY TEAM

Place an order today for Alcoa® Aluminum and it will complete the circuit from local sales office to production planning headquarters in Pittsburgh and then to the plant that will make it—all before the day is out.

Behind this remarkable efficiency is a 20,000-mile teletype network that links Harry Sumner and his fellow sales administrators in 72 sales offices with

every Alcoa production facility from Edgewater, N. J., to Vernon, Calif. Not only can they transmit new orders with the speed of light, but by shortly after noon each day, they can tell you what has been shipped the previous day against existing orders.

Alcoa sales administrators are college graduates with an expert knowledge of customer needs and how to satisfy those

needs. By combining their knowledge and experience with automated communications, Alcoa affords you opportunity for greater-than-ever efficiency in your own operations, with deliveries tightly geared to production needs. It's another extra value in every pound of Alcoa Aluminum you buy. Aluminum Company of America, 2017-M Alcoa Building, Pittsburgh 19, Pa.



ALCOA *helps you design it, make it, sell it*



Alcoa has hundreds of Harry Sumners to help you design it, make it, sell it

All of Alcoa's skills are mobilized to a single purpose: To put more than just 16 ounces of metal in every pound of Alcoa Aluminum you buy. Here are 12 of the dozens of ways to do it:

1. **Research Leadership**, bringing you the very latest in aluminum alloys and applications.
2. **Product Development** by specialists in your industry and your markets.
3. **Process Development Labs** for aid in finishing, joining and fabricating.
4. **Service Inspectors** to help solve production problems at your plant.
5. **Quality Control** to meet top standards or match your special needs.
6. **Complete Line** including all commercial forms, alloys, gages, tempers.
7. **Availability** via the nation's best stocked aluminum distributors.
8. **Foremost Library** of films and books to help you do more with aluminum.
9. **Trained Salesmen** with a wealth of on-the-spot information.
10. **Sales Administrators** constantly on call to service your orders.
11. **Year-Round Promotions** expanding your old markets, building new ones.
12. **The Alcoa Label**, leading symbol of quality aluminum, to mark your goods.

Added Values With Alcoa Aluminum



... is a case book of Alcoa special services and a guide to their availability in design, manufacture and sales. Your copy, with some of the most rewarding information you may ever read, is waiting and it's FREE. Write: Aluminum Company of America, 2017-M Alcoa Bldg., Pittsburgh 19, Pa.

For More Informative Write No. 212 on Inquiry Card—Page 32

DECEMBER 21, 1959

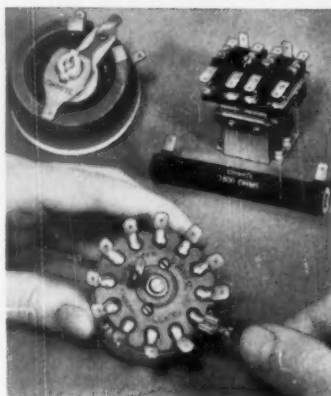
Products

(Continued from page 98)

lated at temperatures from 160 to 180 degrees F at a minimum pressure of 25 psi. **Alloy Industries Development Co., 2211 Firestone Blvd., Los Angeles 2, Calif.**

Write No. 21 on Inquiry Card—Page 32

Units Available with Quick-Connect Terminals



Quick-connect terminals can now be produced on an established line of tap switches up to 15 amp. capacity and on power resistors, rheostats and relays for use on circuits carrying not more than 15 amps. Terminals are specially shaped tabs to which leads can be connected more rapidly than with soldering. Method not only saves time but is also valuable where sequence of connections must be periodically modified or where accessibility for service is important. **Ohmite Mfg. Co., 3653 Howard St., Skokie, Ill.**

Write No. 22 on Inquiry Card—Page 32

Non-Silica Parting Powder Weighs 60% Less

A new non-silica parting powder used in the foundry casting process is more economical because it weighs nearly sixty per cent less and is purchased by the pound. Powder is chemically inert and is used to part core and molding sand for all metals. Waterproofed and extremely fine, new product adheres even to vertical surfaces of core boxes and patterns of wood, metal, plastic or other materials. Powder is particularly useful where core boxes

and patterns have little draft, and when core and molding sand contain ingredients that make the sand sticky. **Frederic B. Stevens, Inc., 1800-18th St., Detroit, Mich.**

Write No. 23 on Inquiry Card—Page 32

New Sharpness in Grinding Discs, Belts

A line of resin-bonded aluminum oxide coated abrasives with a new sharpness and cutting life is now available on fiber discs and cloth belts. Newly developed raw materials and improved coating process are credited for extreme sharpness. Type 101 fiber discs are made in grit range from 150 through 24, belts from 180 through 24. Applied to fiber discs in grit range from 24 to 60 inclusive, a modification called Type 101 T has proved particularly effective on stainless steel, brass, bronze and other alloys. **Behr-Manning Co., Troy, N.Y.**

Write No. 24 on Inquiry Card—Page 32

Sturdy, Accurate Chemical Feed Pumps



Controlled capacity chemical feed pumps in a new series have a repetitive metering accuracy of plus or minus 1%. Capacity is 812 gph or, in the case of Duplex pumps, double that capacity. Maximum pressure is 10,000 psi. Sturdy, low-maintenance pumps move specific volumes of fluid, including "tough" corrosive materials, into high or low pressure systems in virtually all desired ratios with flow, temperature, pressure, conductivity, pH and other process variables. **American Meter Pump Div., 13500 Philadelphia Ave., Philadelphia 16, Pa.**

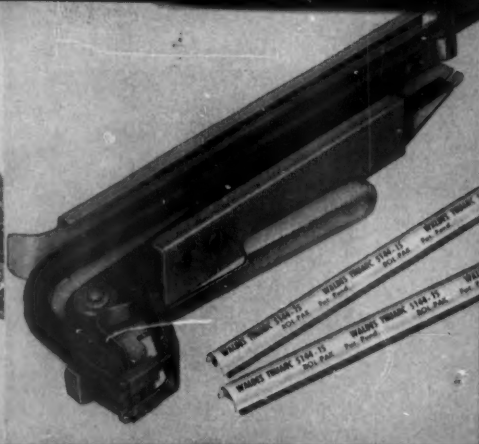
Write No. 25 on Inquiry Card—Page 32



Quality Control—L. Branzburg, (left), Waldes' Director of Quality Control, watches S. Suparmian, (center), Chief Test Engineer at Bulova R&D Laboratories, Inc., set up "Spin-Rig" to test Truarc ring's holding power up to 140,000 rpm.



High production—3000 precision rings a minute are stamped out on new 1000 spm Bliss press... one of the many modern precision machine tools used to manufacture Truarc retaining rings.



Production aids—new magazine-fed Truarc Ring-Jector speeds ring applications; reduces assembly costs. Rapid loading with Truarc Rol-Pak stacked rings... another Waldes exclusive.



Complete technical data



Assured delivery—Waldes' metal inventory is enough for five months' full production. In addition, Truarc rings are nationally distributed from 90 stocking points.



Design assistance—on Mighty Mite Jeep transmission assembly which incorporates 2 Truarc Series 5107 Interlocking Rings. Ned Salmon, Truarc Sales Engineer, at left, talks with Fred C. Schwartz, William A. Heaffer, and Earl J. King, Jr., Project Development Engineers of New Process Gear Div., Chrysler Corp.

PURCHASING VIEWPOINT: Reducing the end cost of your company's product is a basic objective behind any changeover to a new supplier or component. This is precisely what Truarc retaining rings have accomplished for many firms. We offer not only the widest line of rings, but also design and production aid to help you reduce costs. Ask for our Catalog RR 10-58.

9-17



**WALDES
TRUARC® RETAINING RINGS**

WALDES KOHINOOR, INC., 47-16 Austel Place, Long Island City 1, N. Y.

TRUARC RETAINING RINGS . . . THE ENGINEERED FASTENING METHOD FOR REDUCING MATERIAL, MACHINING AND ASSEMBLY COSTS

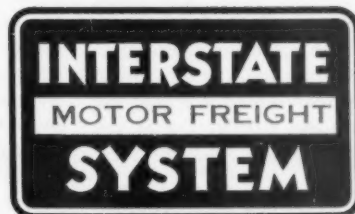
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And the difference adds up to the fastest, most dependable delivery in the transportation industry today. Your shipments leave on time and arrive on time — with clock-like precision. Over 260 daily departures provide excellent service to 8,039 points in 24 states. For your copy of our Merchandise Service Time Schedule, call the Interstate transportation specialist. He's listed in the Yellow Pages.



Grand Rapids, Michigan

MORE THAN A TRUCK LINE... A TRANSPORTATION SYSTEM
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←page Write No. 213 on Inquiry Card—pg. 32
DECEMBER 21, 1959

For More Information Write No. 214 on Inquiry Card—Page 32

Office Equipment and Supplies

Calculating Machines:

Do You Know What You Need?

By Hilda Meier

MANY OFFICES today, although otherwise modern and well organized, are poorly equipped for their calculating work. Some have no equipment, others have obsolete, worn-out machines, and still others have the wrong kind.

Management frequently is not aware of any lack of proper equipment and also personnel are either too timid to ask for more efficient machines or do not realize how much better their jobs can be done with proper equipment.

Before a purchasing agent makes a survey of calculating machine allocations, he should establish the proper fields of use for each type of office calculator (excluding electronic calculators).

There are four distinct types: adding-listing, printing, keydrive, and rotary calculators. A brief description of these types and their fields of use follow:

Adding-Listing Machines

There are two types: A 10-key keyboard and full or selective keyboard. Either type is easy to operate with practically no training. The 10-key keyboard is usually memorized by the operator so it is only necessary to look at the media when entering an amount.

The full keyboard is seldom memorized so operators must glance from media to keyboard.

Field of use—Adding-listing machines are used when a printed tape is desirable to check entries and where the calculating is restricted to adding or subtracting.

Miss Meier studies and tests calculating equipment for the manufacturing division of Western Electric Company, New York. It is estimated that over \$100,000 has been saved through the use of these surveys.

Of course, an occasional multiplication can be done by repeated addition, but normally, multiplication is not considered a primary function of this machine.

The full keyboard is preferred when at least 50% of the entries contain ciphers. Otherwise, the 10-key type is usually preferred.

Printing Calculators

These machines also print factors and results on paper tape, but are also able to do all four arithmetic functions: adding, subtracting, multiplying and dividing.

The keyboard is of the 10-key type and some machines have two keyboards, one for each factor of a multiplication. They are a little more complex than an adding-listing machine and require about one hour of training.

Field of use—Printing calculators are used when a printed tape is desirable to check entries and where about 30% of the work involves multiplying or dividing.

Keydrive Calculators

As the term implies, keydrive means that as the keys are depressed the amounts are immediately entered in the register dials. Answers are shown only in dials and must be copied to preserve the record.

Keydrives are available in full-keyboard and half-keyboard types. Extensive training (several weeks) is required to obtain maximum operator efficiency. When such skilled operators are using the machines, the keydrive is the fastest calculator for adding and subtracting. It may be found equal to the rotary for multiplying and dividing when the factors contain less than six digits.

Field of use—Full keyboard keydrive machines can be used



A keydrive calculator and a skilled operator give the fastest results for adding and subtracting.

for calculating work involving all four arithmetic functions. Keydrive machines can be used effectively only where highly skilled operators are constantly available.

The half keyboard keydrive machine may be used where addition only is required.

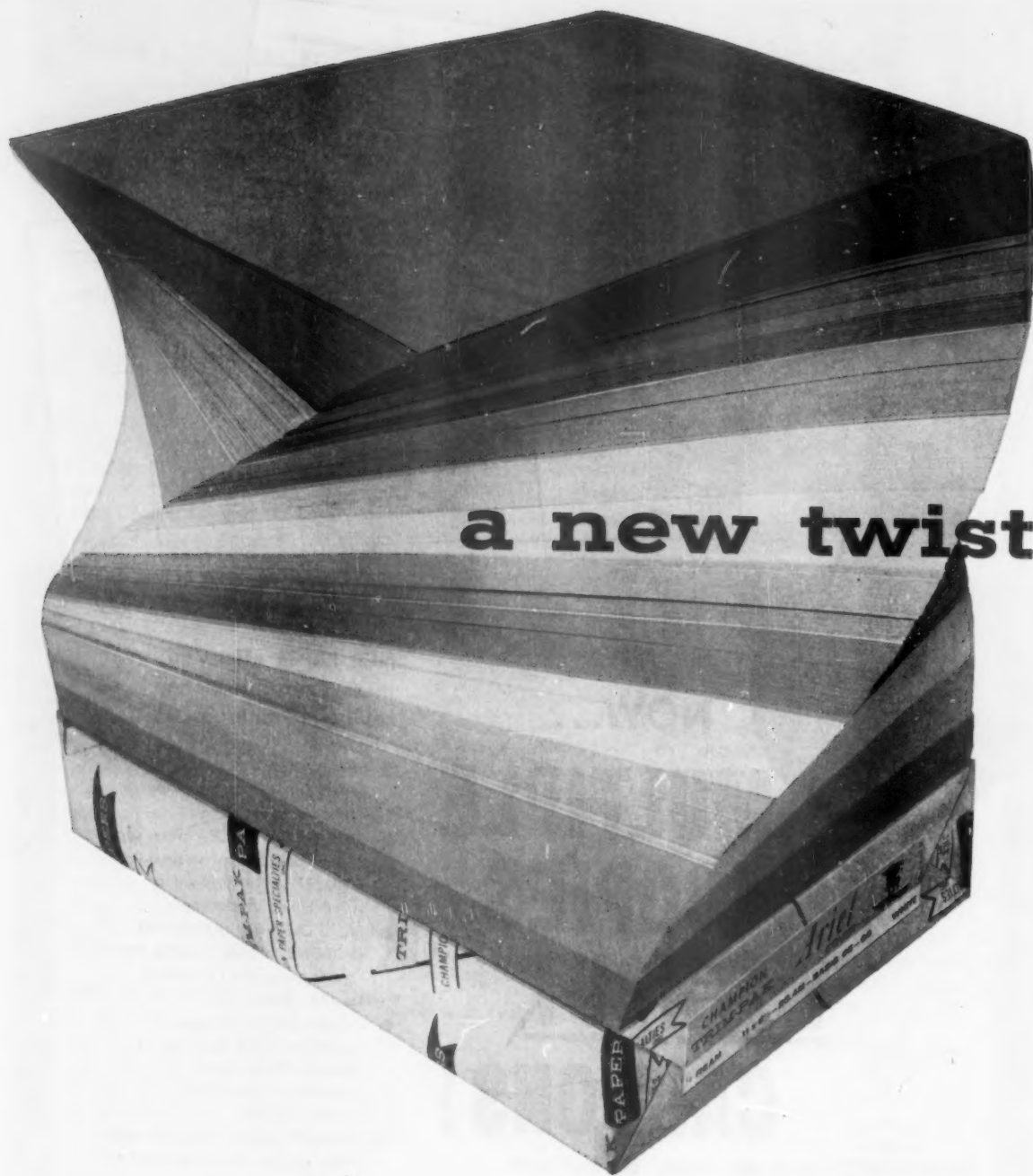
Rotary Calculators

Rotary calculators come in three capabilities: semi-automatic, intermediate, and fully automatic. Most rotaries have full keyboards, some have auxiliary 10-key keyboards, and others have lever set keyboards.

The semi-automatic calculator is the simplest rotary and requires less than one hour of training. On full keyboard machines, division is automatic. Multiplication is done by entering one factor on the keyboard and then depressing the add or subtract bars and shift keys until the multiplier factor appears in the dials; the other dials will then show the product.

The intermediate calculator is somewhat more complex. Both division and multiplication are automatic. There are several functional keys to perform variations, such as negative multiplication, half cent adjustment, locking against clearance, or product and quotient dials.

(Please turn to page 123)



a new twist

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Champion Papers now cut, packaged and ready to run!

It's a new twist in impression papers! It's TRIM-PAK—the most complete line of impression papers ever offered in cut sizes. Now you can get finishes, colors and grades never before available. These are genuine Champion papers in the most popular sizes, accurately trimmed, packaged, and ready to run on all types of duplicating equipment.

TRIM-PAK keeps clean and handy in its own moisture-proof packages; order just the number you need.

TRIM-PAK is ready to move smoothly and rapidly from your shelf, through your equipment and to your customers with a minimum of waste, a minimum of handling. Precision trimming on our new electronic trimmer means papers feed accurately, register better and stack easier. For better printability and greater readability, put your next job on TRIM-PAK. It's available now from your authorized TRIM-PAK merchant. For the complete TRIM-PAK story, fill out and mail the coupon below.



CHAMPION PAPER SPECIALTIES, INC.
Hamilton, Ohio—Subsidiary of The Champion Paper and Fibre Co.

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HAMILTON, OHIO

L-72

- ☐ Please send samples of the new TRIM-PAK line of impression papers.
- ☐ Please have your representative call on me with the complete TRIM-PAK story.

Name _____

Company _____

Street _____

City _____ Zone _____ State _____

For More Information Write No. 216 on Inquiry Card—Page 32

Association News

Grand Rapids P.A.'s Reminded Of Their Stake in World Problems



Discussion workshop preceeded talk by James C. Richards at the recent Grand Rapids meeting. Members of the panel are pictured with speaker prior to the meeting (left to right): Hugh Roach, Haviland Products Company; Mr. Richards; Royce Clay, American Seating Company; and Erwin Phelps, Packaging Corp. of America.



Homer Barber (left), Packaging Corporation of America and program chairman of the Grand Rapids Association of Purchasing Agents was on hand to welcome Mr. Richards of B. F. Goodrich Industrial Products, principal speaker at a recent meeting.

TOP-NOTCH national salesman James C. Richards, vice president of sales for B. F. Goodrich Industrial Products Co., told a recent meeting of the Grand Rapids Association of Purchasing Agents, "Your influence with your companies is rapidly expanding. It's represented in an increasing number of activities such as inventory control, operating, and financial management."

He spoke on the subject, "Buying and Selling—They're Closer Than You Think." Mr. Richards

aligned purchasing's new-found influence with the improved stature of the sales department. "The purchasing function has grown," he said, "because the buying-and-selling relationship must be between people of comparable levels within their respective organizations."

Harmful Practices

After placing sales and purchasing in their current and proper perspectives, Mr. Richards discussed trends in purchasing prac-

tices which he felt are harmful and not in the best interests of either party.

"The over-zealous purchasing agent can create problems not only for his suppliers but for his own company by trying to wring the last penny out of the suppliers' profit. On a short-term basis, this may make a hero out of the purchasing agent, but he may end up doing a disservice to his employer.

"There are times when the purchasing agent must be the supplier's representative in counseling his own production or engineering management. His advice must be: Purchasing quality material at a fair price from a reputable supplier is often cheaper in the long run than being niggardly with a nickel."

Mr. Richards admonished purchasing agents who give preference to foreign goods on the basis of price alone. He urged that quality and service be used as major yardsticks in making "the buy."

Realistic Tariffs

He firmly stated that he was not against international trade. "In my personal opinion, international trade will never be on a sound basis until tariffs realistically reflect the difference in wage rates and the standard of living between the various countries, so that competition is based primarily on quality and service rather than price.

"You have a big stake in this problem," he continued. "You can't insulate yourselves and think just in terms of being purchasing agents. Remember, you do the buying, but your company is, in turn, also a supplier.

"Remember, too, that we in this country have created an extremely high standard of living. Purchasing rather than selling will determine whether or not we will maintain our way of life. Today purchasing is vital to our nation's security.

"And the purchasing assignment is not only vital to the preservation of our living standards, but it may very well control how our country grows in the future against unprecedented competition."

For More Information about ad on facing page
Write No. 217 on Inquiry Card—page 32—

PURCHASING



THESE BIG TOUGH HOSE ASSEMBLIES SOAK UP THE SHOCK OF A SWING FROM TROPICAL HEAT TO -303°F IN SECONDS

It takes many heavy-duty flexible metal hose connections to feed liquid oxygen to a missile. In the photo above are four 3½" I.D. metal hose lines of stainless steel manufactured by Anaconda Metal Hose. They connect three tank trucks to the pumping station which fuels Jupiters at the Army's Redstone Arsenal. Similar hoses are used to make connections between the fueling masts and the missile itself, making it unnecessary to align piping precisely. As fuel masts are kicked off the missile at firing, the hose must be able to withstand rough treatment and hot exhaust

gases, as well as the wide temperature fluctuations.

FREE TECHNICAL SERVICE. Whether you need big, heavy-duty flexible metal connectors for big, tough jobs or small-diameter flexible metal hose for small, tough jobs, Anaconda Metal Hose Division welcomes the opportunity to help you meet your problems of expansion and contraction, movement, vibration, corrosion, pressures, and temperatures. Equipped to work in stainless steel, Monel, and aluminum as well as other alloy steels and copper alloys, Anaconda

specialists are constantly working with design engineers on flexible connector assemblies to meet new problems. For further information or engineering assistance, call your Anaconda Metal Hose representative or write: Anaconda Metal Hose Division, The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

20131

ANACONDA®
METAL HOSE

By Far—Largest Supplier of Ultrasonic Cleaning Equipment to Industry



**ULTRA-NEW!
ULTRASONIC!**



DETREX **ECONO-SONIC** Unit Uses Sound Waves to Get Precision Parts Cleaner, Faster

Ultrasonic cleaning—a combination of solvent vapor degreasing and scrubbing action by high frequency sound waves—gets parts cleaner than is possible by any other method. Costs are reduced and production is increased.

The DETREX ECONO-SONIC dimensions are 24" x 14" x 29" high. This size is ideal for precision part cleaning in small to moderate sized plant operations.

With its own filter, still, pump, heater, spray lance and model 600 generator, it is a complete, self-contained cleaning system. There is nothing else to buy and it installs in minutes.

Where hyper-critical specifications exist, Detrex can supply the additional stages necessary to accomplish an in-line cleaning system. Why not write today and let a DETREX representative show you how an ECONO-SONIC unit, or a larger ultrasonic machine, can improve the quality and reduce the expense of your metal cleaning operation.

Depend on DETREX for
Every Metal Cleaning
and Processing Need

- PERM-A-CLOR NA
(Trichloroethylene)
- Solvent Degreasers
- Ultrasonic Equipment
- Industrial Washers
- Phosphate Coating Compounds
- PAINTBOND Compounds
- Aluminum Treating Compounds
- Alkali and Emulsion Cleaners
- Rust Proofing Materials
- Extrusion and Drawing Compounds
- Spray Booth Compounds

Send for T. J. Kearney's
Informative Paper on
Ultrasonic Cleaning Techniques.

DETREX

CHEMICAL INDUSTRIES, INC.

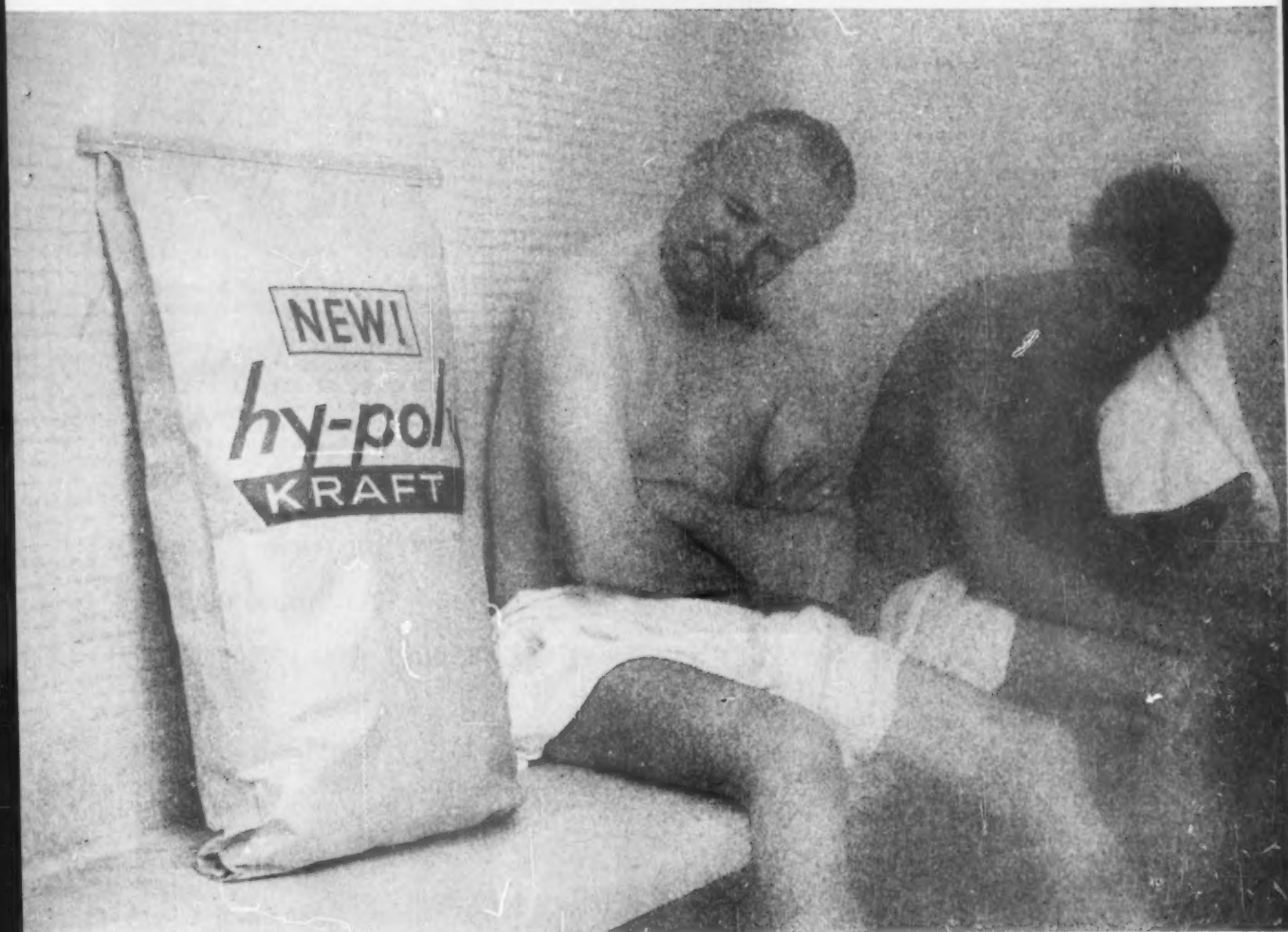
Box 501, Dept. P-1259, Detroit 32, Michigan

World's Largest Exclusive Producer of Cleaning Chemicals and Equipment

For More Information Write No. 218 on Inquiry Card—Page 32

For More Information about ad on facing
page Write No. 219 on Inquiry Card—pg. 32→

**Now International Paper saves you
\$5 to \$16 per thousand PE multiwalls!**



**Read why new humidity-proof "Hy-poly" kraft makes
medium and low-density polyethylene sheets extravagant!**

THE multiwall bag you see taking a Turkish bath in our picture contains calcium chloride.

We steamed this new Bagpak® multiwall in 95% relative humidity at 120° F. for 48 hours. (Unprotected, under these conditions, this chemical takes on 2 ½ times its weight in water in about an hour!)

But when we opened up the bag, the thirsty crystals spilled out as though they had been stored on the Sahara!

And Bagpak's new Hy-poly kraft *saves you money*. You stand to save from \$5 to \$16 per thousand multiwalls!

That's because new Hy-poly kraft is so superior to medium and low-density PE sheets that you get equal, if not greater, moisture-vapor protection from a coating approximately *half as thick!*

Extensive laboratory tests prove that this dramatic new barrier sheet is superior in *every way*. Write us today for samples.



See how calcium chloride protected by Hy-poly kraft Bagpak, pours after 48-hour steam bath!

Bagpak Division **INTERNATIONAL PAPER** New York 17, N. Y.

Association News

Denver Packs Them In

Vice President C. W. Manning (right), Climax Molybdenum Co., chats with the principal speaker at the recent meeting of Purchasing Agents Association of Denver, Dr. Charles Romine, personnel director for Jefferson County, Colo. schools.



Officers of the Denver Association after the monthly dinner meeting. They are (left to right): C. W. Manning, Climax Molybdenum, vice president; Paul M. Cheney, Susquehanna Corp., secretary; J. B. Turtle, Ideal Cement Co., president; and Robert Grabert, Eastman Oil Well Survey Co., national director.

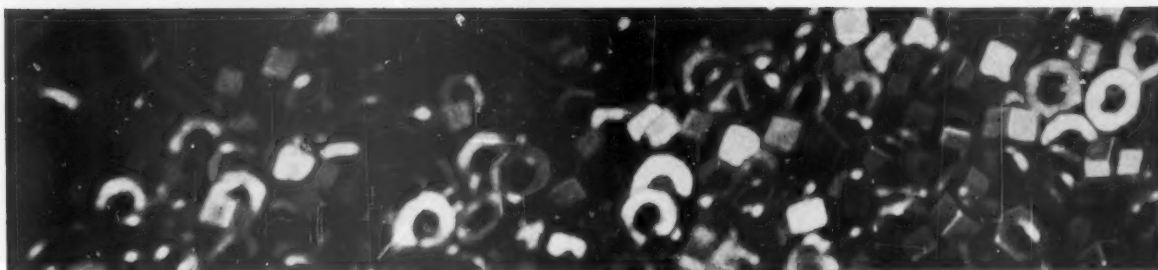
Three college purchasing executives point up one advantage of association membership in a pre-meeting huddle: the opportunity to meet other P. A.'s in the same industry. Standing left to right are: Earl Guthrie, Denver University; Gurnett Steinhauer, Colorado School of Mines; and Glenn Davis, Denver University.



Gulf tells Armeo. Bill Ellis (l.) and Don Hutcheson (c.) of Armeo Drainage and Metal Products listen to W. T. Comfort, Gulf Oil Co., during the informal gathering which preceded the recent meeting of Denver Association.



Change in nut saves \$11,000



RB&W survey shows business machine maker
how simple change in fastener dimensions will add
to profits the equivalent of \$110,000 in extra sales

A simple change in nut size offered one typewriter manufacturer an \$11,000 a year saving. Yet it involved no re-engineering . . . no compromise with quality.

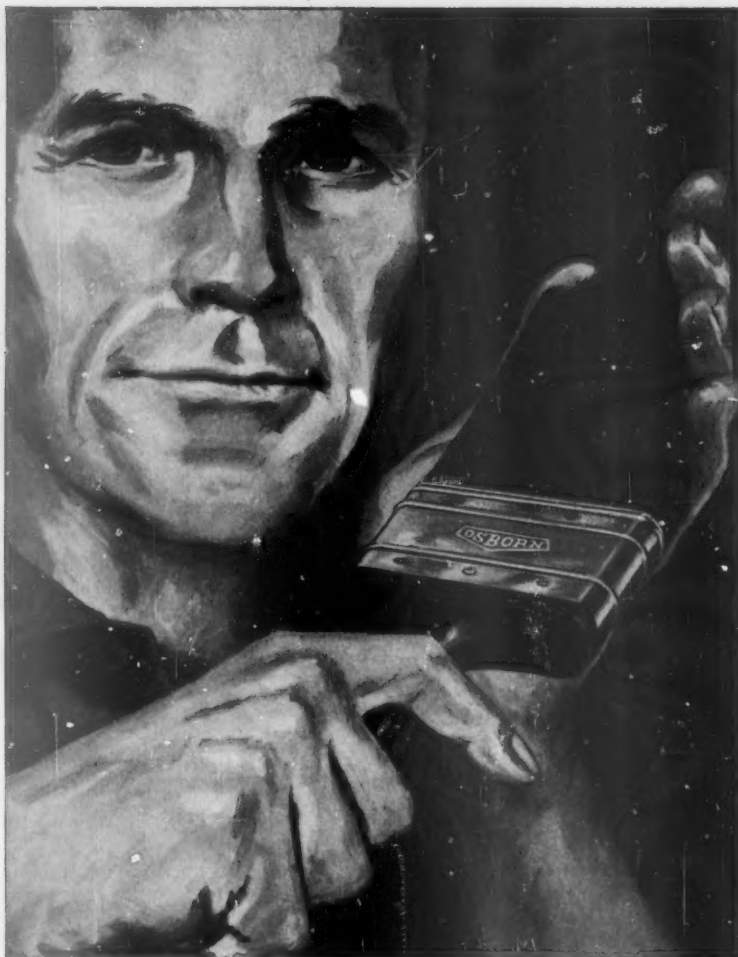
The RB&W Fastener Man was invited to make a survey of the manufacturer's fastener usage. In studies of blueprints and specifications, he found only one minor area for improvement—but what an improvement! The drawings still showed a hex nut taken from specifications long obsolete as a standard. By simply switching to the current

standard size, the manufacturer could save \$11,000. That's pure profit. Even if his net-on-sales were as high as 10 per cent. It would take *extra* typewriter sales of \$110,000 to net the same amount.

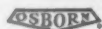
Are you sure you're not wasting needless dollars on fastener specifications? Why not ask for an RB&W man to make a survey of your fastening operations. He's no smarter than your engineers, but he knows what to look for. Write Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, New York.



Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. Additional sales offices at: Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco. Sales agents at: Cleveland, Milwaukee; New Orleans; Denver, Fargo. Distributors from coast to coast.



**EVERY TIME
YOU BUY
THIS
BRUSH...
YOUR
OWN
GOOD
JUDGEMENT
SHOWS**



METAL FINISHING MACHINES... AND FINISHING METHODS
POWER, PAINT AND MAINTENANCE BRUSHES • FOUNDRY PRODUCTION MACHINERY
For More Information Write No. 221 on Inquiry Card—Page 32


Today's industrial buyer is a special kind of expert. His job: spot and buy genuine value down the line—big purchase or small. And when it comes to *brushes*—both the men who *buy* and the men who *use* them agree on Osborn.

- The right Osborn Paint and Varnish Brushes, for instance, help your crew do jobs more quickly, more easily ... at less cost.

So to save buying time ... to cut buying costs ... to get built-in value automatically everytime—make Osborn your brand for all industrial brushes. Choose from a complete line of superior:

- Power brushes
- Paint and Varnish brushes
- Maintenance brushes

Full details in the new Osborn 112-page Catalog. Write for your free copy. *The Osborn Manufacturing Company, Dept. U-51 Cleveland 14, Ohio.*

Osborn Brushes 

Association News

Purchasing's Future Described At South Bend

Dr. John H. Hoagland, a leading educator in the purchasing field and director of Michigan State University's "Purchasing Seminar", was the featured speak-



Dr. John H. Hoagland

er at a recent meeting of the South Bend Purchasing Agents Association.

Speaking on the subject "Purchasing—Past, Present and Future", Dr. Hoagland analyzed the purchasing agent's role in developing the future both of the National Association and of himself. He spoke of the need for more purchasing education in our nation's colleges and universities, and gave a digest of the course offered at Michigan State.

Dr. Hoagland urged that each member, partially through strong support and participation in the affairs of his local association, sell the N.A.P.A. to management, to gain the recognition they must have to fully do the job expected of them. A question and answer period on the subject of purchasing education followed Dr. Hoagland's speech.

N.A.P.A. Appointments

The following changes in national committees were recently announced:

(Please turn to page 118)

Things You Should know about

Vogt

FORGED STEEL
VALVES, FITTINGS
FLANGES & UNIONS



Vogt FORGED STEEL
GATE VALVE
ROUND BORED BODY
GASKET JOINT

22 World's most complete line of forged steel valves, fittings, flanges, and unions

23 COMPLETE DATA IN CATALOG F-10

This comprehensive catalog contains engineering data and features of the newest Vogt valves for industrial and process use. Contains complete information on types and trims to best meet severe field and gas handling service at all temperatures and pressures. A copy is available to you—please send your request, on your company letterhead, to Dept. 244-FPM.

HENRY VOGT MACHINE CO., LOUISVILLE, KY.

SALES OFFICES: New York, Chicago, Cleveland, Dallas, Houston, St. J., St. Louis, Charleston, W. Va., Cincinnati

design flexibility in glass



Lancaster glass spells appliance magic

For appliance manufacturers, Lancaster glass parts offer a bright new world of opportunity. Whatever your product or problem, Lancaster can provide functional and decorative glass components custom-made to your exact specification. Let us show you how Lancaster craftsmanship can give your appliance extra beauty and utility that will pay off in extra sales. Send blueprints, or write to Lancaster Glass Corporation, Lancaster 4, Ohio. Telephone OLive 3-0311.



For More Information Write No. 223 on Inquiry Card—Page 32

Association News

(Continued from page 116)

Literature Review Committee

—The following were added to this committee to bring its total membership to 12: Henry R. Michel, Celanese Corporation of America, Charlotte, N.C.; George Mosher, Drake University, Des Moines, Iowa; E. S. Page, Olin Mathieson Chemical Corp., New York; Robert C. Rex, The Martin Company, Baltimore.

National Committee on Containers—G. G. Garbee, Producers Creamery Company, Springfield, Missouri has been appointed a committeeman by National Chairman G. R. Smith.

National Committee on Nonferrous Metals—Thomas J. Costello, The Ucinite Company, Division of United-Carr Fastener Corp., Newtonville, Mass. will report on the cadmium situation.

National Committee on Coal—Edwin J. Faster, Inland Steel Company, East Chicago will serve as a committeeman in the Central Competitive Region under Regional Chairman R. W. Lundgren.

National Committee on Fuel Oil—A. C. Greer, Pittsburgh Steamship Division, United States Steel Corp., Cleveland, will serve as a committeeman in Region No. 2, Detroit Area under Regional Chairman G. R. McQuiston.

Evansville Group Hears Banker

The Purchasing Agents Association of Evansville (Indiana) recently held an educational session prior to their regular monthly meeting. The session consisted of a problem clinic conducted by Roy Sheets of Arkla Air Conditioning Corp., Evansville.

The regular business meeting, which followed, was presided over by President H. E. Troyar of Bernardin Bottle Cap Co. The featured speaker for the evening was James J. Worthington, Citizens National Bank of Evansville.

Mr. Worthington spoke on "Banking Principles on Credit Information."

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PURCHASING



Crucible stainless highlights the quality in your product

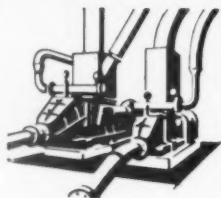
This is because Crucible precision-rolls stainless to produce finishes of incomparable lustre. Not only that, Crucible methodically checks each heat to ensure uniform physical properties and accurately controls gauge with electronic measuring devices. For stainless in all gauges down to .010" and in all strip widths, call or write: Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.

CRUCIBLE STEEL COMPANY OF AMERICA

CANADIAN DISTRIBUTOR — RAILWAY AND POWER ENGINEERING CORP., LTD.

FULLER EQUIPMENT

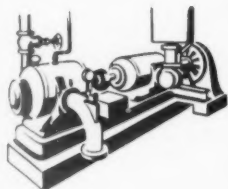
for the process industries



bulk materials pneumatically. Fuller-Kinyon

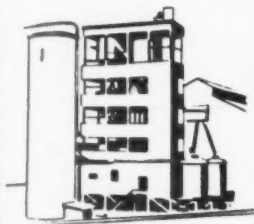
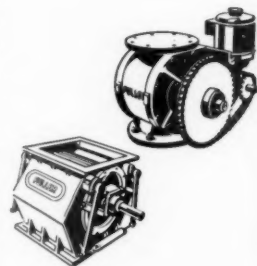
Pneumatic Materials Handling Systems. Widely specified throughout the process industries, Fuller's range of equipment offers best single source for solving problems in moving dry

Pumping Systems, Airveyor® Pressure and Vacuum Conveying Systems, and F-H Airslide® Fluidizing Conveyors are completely sealed to prevent both contamination of the product and any leakage of dust, etc., into the surrounding area. They are used to move dry, granular and pulverized materials to and from cars, ships, trailers, storage and processing points.



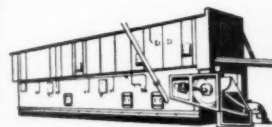
Fuller Rotary Compressors and Vacuum Pumps are vibration-free, can be installed anywhere, even on balconies. Fewer moving parts mean minimum maintenance. Compressors and Vacuum Pumps handle air and gases from 30 to 3300 cfm at pressures to 125 lb. gage. Vacuums to 29.95 in. (referred to 30-in. barometer).

Fuller Vane-type and Roll Feeders . . . for volumetrically controlled feeding of a wide range of dry pulverized or granular materials. Also Fuller Rotary Valves . . . used under silo deck slabs and bins to permit the free flow of pulverized materials which tend to arch, such as lime and cement raw materials.



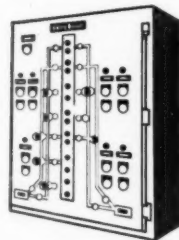
Fuller Preheaters, Humboldt Suspension Type . . . for preheating dry, pulverized Portland cement raw materials with rotary kiln waste gases.

Fuller Horizontal and Inclined Grate Coolers are compact, easily installed for fast, efficient cooling of materials such as nodulized phosphate rock, pebble lime, ores, dolomite, iron nodules and Portland cement clinker from 2800°F. or higher to any desired point within a reasonable range of atmospheric temperature.



Fuller-Material-Level Indicators signal audibly and visibly when materials reach a predetermined high or low level. Controls conveyor motors, valve circuits, etc.

Fuller Control Panels permit automatic, remote, one-man control of multiple operations. Easily-read panel permits visualizing flow of material to storage or from process bins.



Fuller equipment is designed to help give you maximum efficiency at minimum cost. Send today for more detailed literature.



FULLER COMPANY
170 Bridge St., Catasauqua, Pa.
Subsidiary of General American Transportation Corporation
Offices in Principal Cities Throughout the World



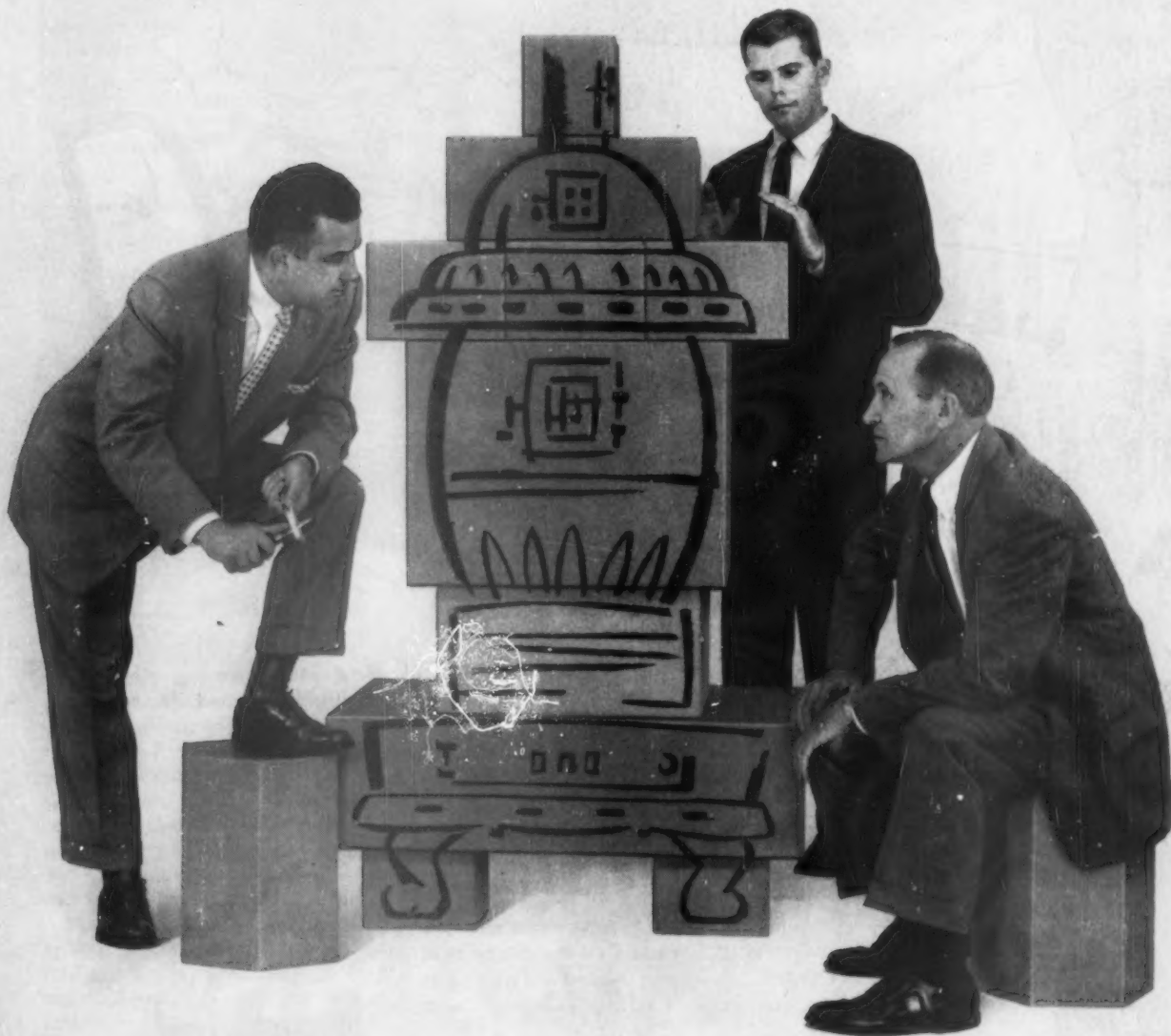
For More Information Write No. 225 on Inquiry Card—Page 32

For More Information about ad on facing page Write No. 226 on Inquiry Card—pg. 32—
PURCHASING

GAYLORD PACKAGING SCORES IN THE HOT STOVE LEAGUE

When the talk is about whittling costs of packing and handling corrugated containers, Gaylord comes in first. That's why Gaylord is brought in early in any packaging discussion. The "book" says Gaylord is good field, good hit . . . with nation-wide field service handy to you, plus seasoned talent to analyze your needs and hit on the sound solution.

Is some packaging requirement throwing you a curve?
Call in your G-man . . . he'll help you in a heartwarming way.



GAYLORD
CONTAINER CORPORATION



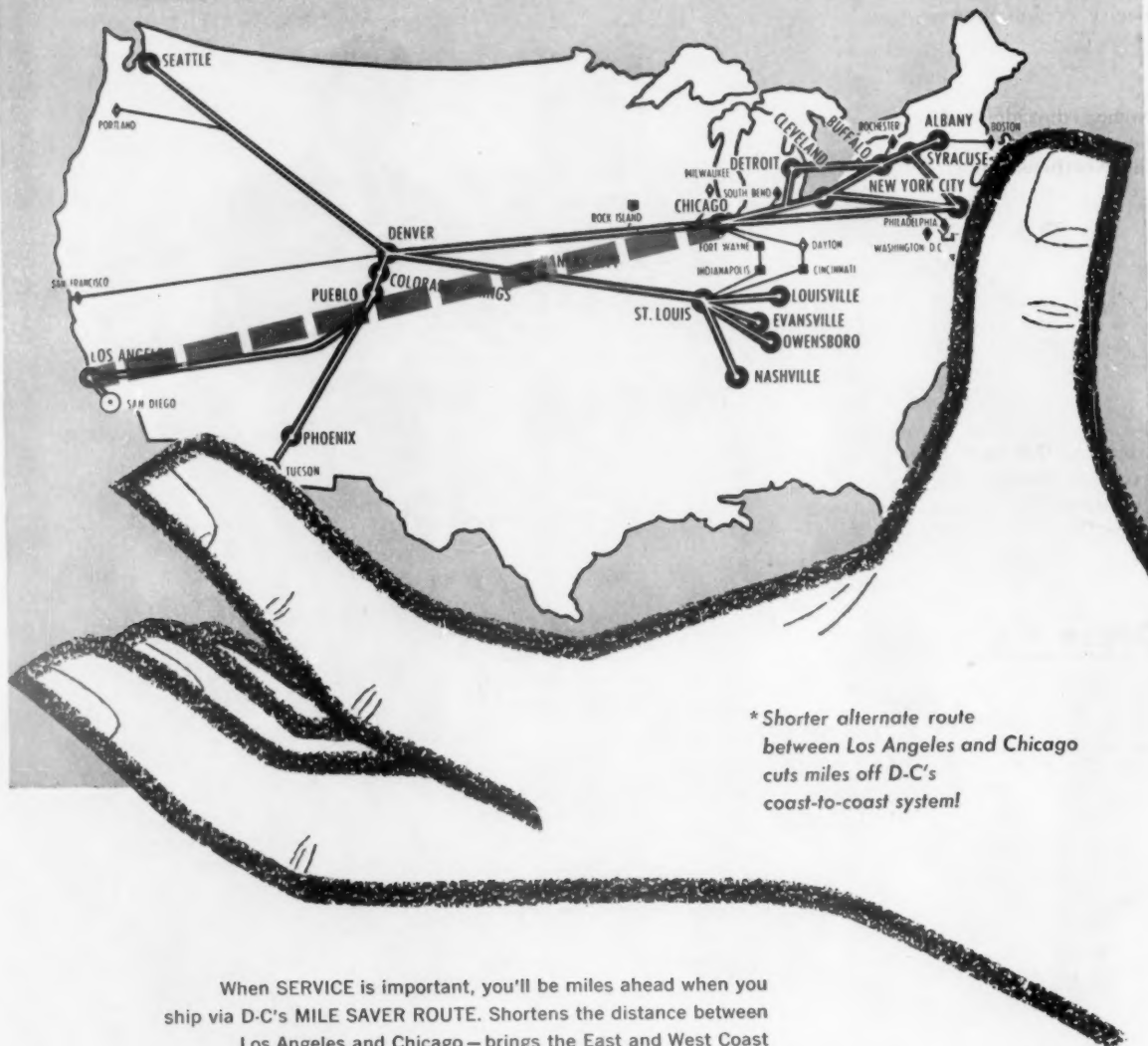
HEADQUARTERS, ST. LOUIS
PLANTS COAST TO COAST

DIVISION OF **Crown Zellerbach Corporation**



Shorten the distance coast-to-coast with...

D-C's MILE SAVER* ROUTE



* Shorter alternate route
between Los Angeles and Chicago
cuts miles off D-C's
coast-to-coast system!

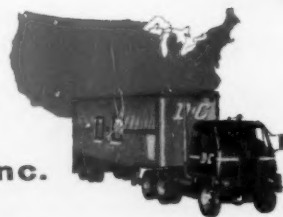
When SERVICE is important, you'll be miles ahead when you ship via D-C's MILE SAVER ROUTE. Shortens the distance between Los Angeles and Chicago — brings the East and West Coast miles closer — makes D-C's DIRECT SERVICE even more direct!

Try D-C's MILE SAVER ROUTE on your next shipment — you'll discover why D-C is the coast-to-coast choice for coast-to-coast service!

DENVER CHICAGO TRUCKING CO., Inc.

THE ONLY DIRECT COAST-TO-COAST CARRIER!

For More Information Write No. 227 on Inquiry Card—Page 32



Industry

Chemetron Building Ninth CO² Plant

Cardox Division, Chemetron Corp. is constructing a plant to recover carbon dioxide from ammonia at **Gibbstown, N.J.** The division operates eight other carbon dioxide facilities across the country from California to West Virginia.

The new plant will have a capacity of 155 tons of carbon dioxide per day. Raw materials will be obtained from a nearby **Du Pont** ammonia plant. Both liquid carbon dioxide and dry ice will be produced for distribution in the **Northeastern U.S.**

Robinson Clay Adds Six Kilns

A producer of clay pipe and refractories, **The Robinson Clay Product Co.**, is constructing six new periodic kilns at its **Pottstown, Pa.** factory. Part of a three-quarter million dollar expansion program, the new kilns will increase production at Pottstown by one-third. The company operates nine other plants in Pennsylvania and Ohio. Headquarters are at **Akron, Ohio.**

Office Equipment

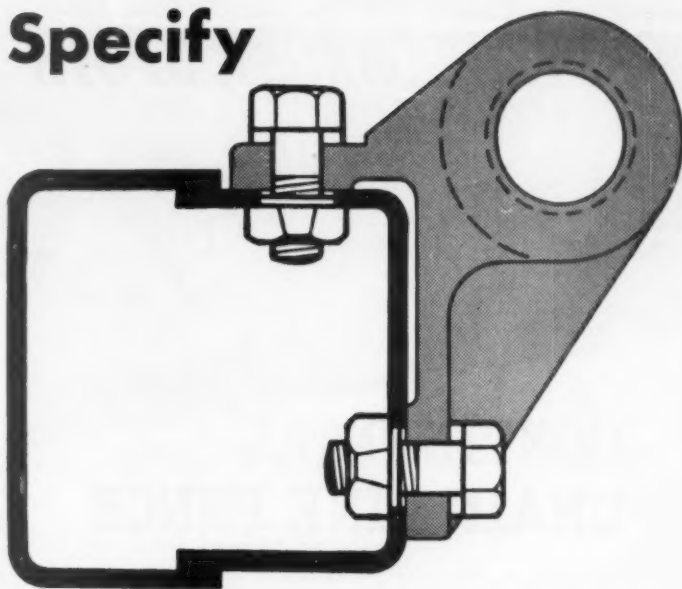
(Continued from page 106)

The fully automatic calculator has all the features of the intermediate calculator plus additional functional keys for complex calculating work to fit a particular requirement. Some machines will obtain square roots automatically, while others will produce individual products and simultaneously accumulate them.

Field of use—The rotary calculator is designed primarily for multiplying and dividing. The semi-automatic is used for simple calculating, the intermediate for more complex work and the fully automatic for specialized functions or very complex calculations. The simpler types are used by accounting clerks and the more complex types are run by statisticians and engineers.

DECEMBER 21, 1959

Specify



MIDLAND WELDING NUTS for those hard- to- reach spots!

On the lookout for ways to cut costs and save time? Write for free booklet, "Save With Midland Welding Nuts."



**MIDLAND-ROSS
CORPORATION**

OWOSSO DIVISION • OWOSSO, MICHIGAN



For More Information Write No. 228 on Inquiry Card—Page 32

PROTECT DANGER SPOTS



with CONTINENTAL® CHAIN LINK FENCE

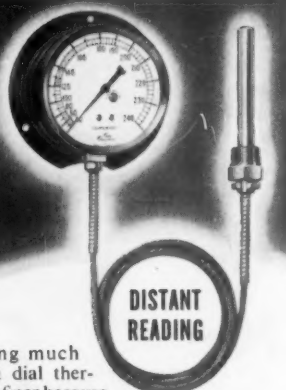
This is the fence that gives you extra protection, extra resistance to rust and corrosion, because it is the only fence made of stronger, longer lasting KONIK STEEL. H-section line Posts are 15 percent stronger, too. Terminal posts and post caps are heavier, more rugged. Extra strength throughout, with galvanizing after weaving, mean longer fence life at lower cost per year, without maintenance!

Write today for your Free PLANNED PROTECTION Manual

CONTINENTAL STEEL CORPORATION
KOKOMO • IND.

For More Information Write No. 229 on Inquiry Card—Page 32

The dial thermometer at its best



Something much finer in a dial thermometer: finer because it is the bourdon tube type of thermometer at its best...embodies the greater precision and lasting accuracy of the Marsh Pressure Gauge.

Both vapor tension and gas-filled types are available in either distant reading or rigid stem types. In the broad Marsh line you have a complete selection of temperature ranges, case sizes, styles, and finishes.



Ask for the Thermometer Catalog

MARSH

MARSH INSTRUMENT COMPANY, Dept. G, Skokie, Ill.

Division of Colorado Oil and Gas Corporation

Marsh Instrument & Valve Co., (Canada) Ltd.

8307 103rd St., Edmonton, Alberta, Canada

Houston Branch Plant, 1121 Rothwell St.

Sec. 15, Houston, Texas

For More Information Write No. 230 on Inquiry Card—Page 32

Delayed Deliveries

(Continued from page 84)

is asked to pay \$100 in damages for failure to deliver an item priced at \$10.

Unfortunately for the purchasing agent seeking guidance, there has been considerable disagreement on this question. Several of the decisions have denied recovery beyond the price of the goods on the basis that such damages would not have been contemplated or agreed to in advance by the seller. For example, where delay in delivery of grain elevator parts priced at \$1600 resulted in alleged damages of \$7,000, the appeals court reversed the award of the lower court, saying: "It would be most unreasonable to presume that he (the seller) would have assented to the contract upon such a condition."

In a similar situation, however, a Georgia court did not bar recovery of \$5000 profit claimed for late delivery of parts for smelting equipment although the price of the delayed parts was only \$500.

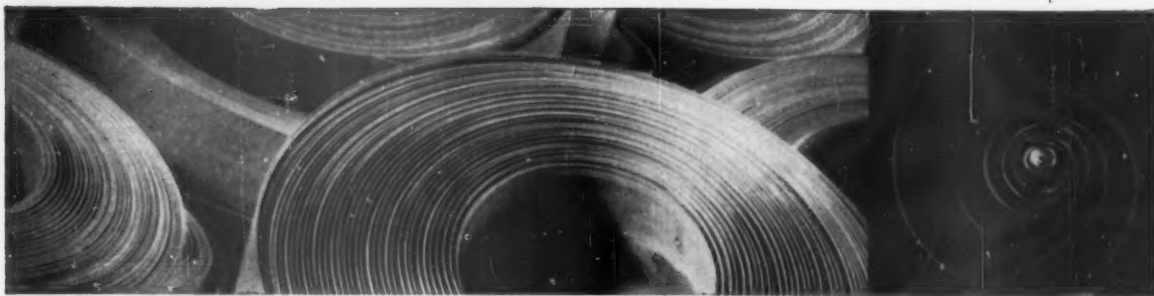
It is significant that neither the Restatement of Contracts quoted above, nor the provisions of the Uniform Commercial Code make any reference to the price of goods in relation to consequential damages. It appears, therefore, that the purchasing agent should not hesitate to claim damages exceeding the price of items purchased if he is convinced that the situation warrants assertion of consequential damages.

Recommendations

(1) When the purchasing agent anticipates unusual difficulty or loss if a particular order is not delivered on time, the supplier should be so informed, in writing.

(2) Notice must be given to the vendor before or at the time of placing the order. Later notice is ineffective.

(3) Recovery of consequential damages caused by delayed deliveries requires a strict measure of proof. All details must be carefully established to show the actual amount of alleged losses.



Check your requirements against these Wallace Barnes Cold-rolled Specialty Steels

Furnished in these carbon grades:

1.25 - 1.32% .90 - 1.05% .70 - .80% .59 - .74% .48 - .55%

ANNEALED AND HARD-ROLLED

Thickness

.003 - .010" in widths $\frac{1}{8}$ to $6\frac{1}{4}$ "	.036 - .049" in widths $\frac{3}{8}$ to 13"
.011 - .014" " " $\frac{3}{16}$ to 11"	.050 - .064" " " $\frac{1}{2}$ to 13"
.015 - .019" " " $\frac{3}{16}$ to 13"	.065 - .093" " " $\frac{3}{4}$ to $6\frac{1}{4}$ "
.020 - .035" " " $\frac{1}{4}$ to 13"	.093 - .125" " " $\frac{3}{4}$ to $6\frac{1}{4}$ "

HARDENED AND TEMPERED

Scale-free or scaleless; polished*; polished and blued*; polished and strawed*

Thickness

.003 - .004" in widths $\frac{1}{8}$ to 2"	.031 - .035" in widths $\frac{1}{4}$ to 7"
.005 - .007" " " $\frac{1}{8}$ to 3"	.036 - .040" " " $\frac{3}{8}$ to 7"
.008 - .009" " " $\frac{1}{8}$ to 4"	.041 - .049" " " $\frac{3}{8}$ to 6"
.010 - .014" " " $\frac{3}{16}$ to 5"	.050 - .060" " " $\frac{1}{2}$ to 4"
.015 - .019" " " $\frac{3}{16}$ to 7"	.061 - .064" " " $\frac{1}{2}$ to 3"
.020 - .025" " " $\frac{1}{4}$ to $8\frac{1}{2}$ "	.065 - .093" " " $\frac{3}{4}$ to 3"
.026 - .030" " " $\frac{1}{4}$ to 8"	

*Maximum width for polishing in .010 - .030 thickness ranges is 5 in.

Facilities for processing alloy steels also are available.

Standard sizes normally available for prompt shipments.

Write for a copy of "Physical Property Charts" that give performance characteristics of .90 - 1.05% and .70 - .80% carbon grades.

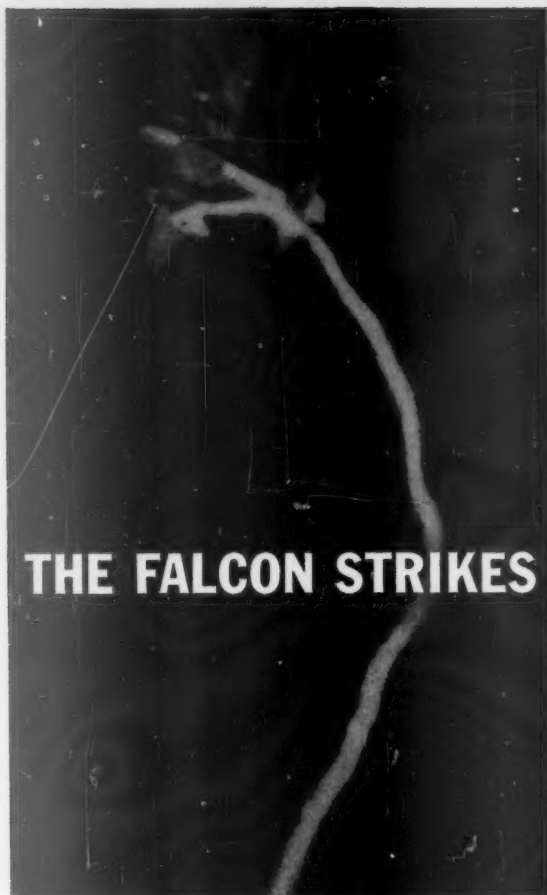
Wallace Barnes Steel Division

Bristol, Connecticut



**Associated Spring
Corporation**

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... and Bristol Multiple-Spline socket screws are aboard!

The air-to-air Falcon Missile, designed and built by Hughes Aircraft Company, is now fully operational in squadrons of the Air Defense Command.

Naturally, we're proud that Bristol socket screws were selected for this outstanding new defense weapon. Every Falcon component must meet the most rigorous military standards and must stand up under the most severe environments.

Bristol-originated Multiple-Spline socket screws are ideal for critical holding jobs. They are used in hundreds of products: shavers, communications equipment, instruments, vending machines, cameras—as well as guided missiles.

On sale at leading industrial distributors. Ask your distributor about them today. He can give you sound advice on your application problems and fast service from complete stocks.

A.7.7

Precision socket screw manufacturers since 1913

Bristol's Hex Socket Screws

Bristol's Multiple-Spline Socket Screws

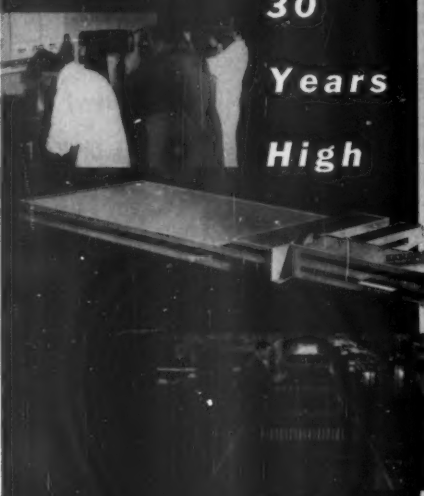
*Made in sizes as small as No. 0 in Alloy Steel and Stainless Steel. Cap screws up to 1 3/4" diam.

THE BRISTOL COMPANY Socket Screw Division
Waterbury 20, Conn.

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126

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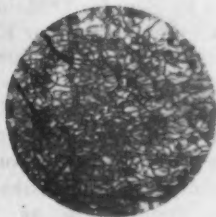
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the difference, after 36 months, between test panels made with PARAPLEX P-444 and those made with conventional light-stabilized polyester resin.

Only panels made with PARAPLEX P-444, the Rohm & Haas acrylic-polyester resin, can bear this identification label. We will be glad to send you the names of manufacturers who use PARAPLEX P-444.

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PARAPLEX P-444



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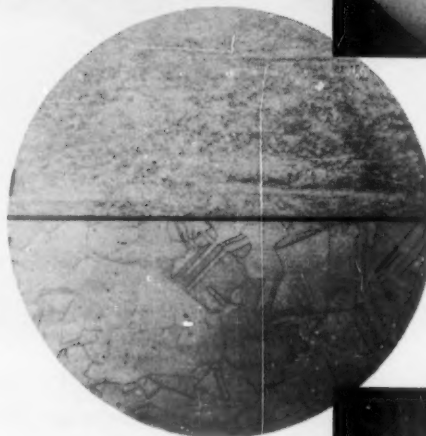
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*To Get
The Grain
That Takes
The Strain*

Specify
WRM

**Precision Annealed
PHOSPHOR BRONZE**

**WRM PRECISION
ANNEALED SPRING TEM-
PER PHOSPHOR BRONZE**



▲ Upper photomicrograph shows the fine even, grain structure resulting from WRM precision annealing. This structure gives the metal up to 30% greater fatigue life plus the increased formability that enables it to take the strain of severe bends as shown above.

**ORDINARY ANNEALED
SPRING TEMPER
PHOSPHOR BRONZE**



▲ Lower photomicrograph shows coarse uneven grain that causes the type of cracking shown here.



For more information on WRM precision annealed phosphor bronze send for this new, free bulletin.



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For More Information Write No. 235 on Inquiry Card—Page 32

Washington—1960

(Continued from page 75)

basic new government agency—certainly its creation could come about only after lengthy hearings.

One major measure which should not be overlooked in assessing the legislative scope of the upcoming session of Congress is the proposal to amend the Fair Labor Standards Act—specifically the amendment that would increase the minimum wage.

Senator John F. Kennedy (D.) of Massachusetts introduced a bill (S. 1046) which broadens the coverage of the Fair Labor Standards Act, largely in the retail and services fields—and also increases the minimum wage from the present \$1 an hour to \$1.25.

The Administration has opposed such an increase on the ground that it is inflationary, and were it not for the elections in November, the proposal to raise minimum wages would not have a chance. But in the highly charged political atmosphere of the forthcoming session, some increase in the wage floor might be enacted.

Amend Clayton Act

Several measures introduced in the first half of the Congress call for amending the Clayton Act to require prior notification of corporate mergers and acquisitions.

The purchasing agent's interest in this type of legislation is indirect, but obviously widespread mergers reduce the number of alternate sources of supply, and the P.A. is therefore affected by any law that concerns merger trends.

Two similar measures have been proposed—one is S. 442, introduced by Senator O'Mahoney for himself and for Senator Kefauver, and the other is S. 1005 introduced by Senator Wiley.

O'Mahoney's bill would bar a corporation from acquiring the assets of another corporation if the merger would substantially lessen competition or tend to create a monopoly.

Also, if the assets of the acquiring and acquired corporations have a total book value of more

(Please turn to page 130)

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MONEY! That's right. I saved real cash by switching to Numatic towels and Tymatic tissue. How? The hand crank on the Numatic cabinet gives users all the towels they need but eliminates thoughtless grabbing. The Tymatic double roll cabinet feeds the tissue *sideways* thus stopping shredding, vertical tearing and unnecessary pulls.

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"We always specify Chicago Molded for plastic parts, says Purchasing Agent Jim Mackey of the Sloan Valve Company, and we're always sure of *purchasing for profit*. It's a combination of reliable custom molding service, finest quality, expert engineering assistance, the right price and on-time-delivery." Take the word of a man who knows, for help in plastic parts, call, specify:

CHICAGO MOLDED

PRODUCTS CORPORATION

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Washington—1960

(Continued from page 128)

than \$10 million, 60-days' notice of intent to merge would have to be given to the Federal Trade Commission and to the Attorney General.

This pre-notification procedure is designed to give the government a chance to examine if the proposed acquisitions or mergers would substantially lessen competition.

Pre-merger notification has been considered during sessions of three different Congresses, and the proposals were very active during the first half of the present Congress. **There is considerable support for this type of legislation** by legislators of both parties, and the measure will be actively considered during the session ahead.

Broaden Fair Trade Coverage

A number of fair trade bills were introduced during the first session of the current Congress. Of these, **H.R. 1253** introduced by Representative Oren Harris (D.)

of Arkansas, has the broadest support. This bill **would legalize fair trade pricing in States which do not permit it now**. Only five States and the District of Columbia now do not have fair trade.

The House Interstate and Foreign Commerce Committee favorably reported **H.R. 1253** last June, but the House Rules Committee would not grant a rule so that it could go before the House for a vote. In the Senate, the Senate Interstate Committee held hearings, but did not vote on the measure.

Three bills have been introduced affecting military procurement. The most inclusive is **S. 500**, introduced by Senator Leverett Saltonstall (R.) of Massachusetts.

The Saltonstall proposals calls for considerable change in military procurement policy. The Senator claims that his overall objective is to reduce the lead time from the design stages to final delivery of military weapons.

To do this, **the bill encourages the Weapon System Management Concept**, under which industry

(Please turn to page 132)

*At P·I·E ...
Where People
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the
Difference*



When an "old pro" rates your shipment ...

THE PRICE IS RIGHT!

Whatever your shipment ... wherever it's going ... "old pros," like Albert Erb, P·I·E Omaha, know the fastest and most economical way to route it ... and you can be sure *the price is right!* Their special knowledge of tariffs and carrier routes comes of growing-up with the motor freight industry. Experience like this is one of the many reasons why your next shipment should go P·I·E—where people spell the difference.



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P·I·E Delivers the Goods...in good shape...in good time!

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732 BRIGGS DRIVE, EAST GREENWICH, RHODE ISLAND

For More Information Write No. 239 on Inquiry Card—Page 32

Washington—1960

(Continued from page 130)

takes over the major responsibility in production of a weapon. The Senator favors greater exemption of incentive and fixed price contracts from renegotiation—also proposes that "performance" specifications be used to a greater extent in place of the "elaborate detailed specification" now required.

Two other measures affecting military procurement are pending before Congress. One, introduced by Senator Jacob J. Javits (R.) of New York (S. 1875), **requires that when the military finds it must buy on a negotiated, rather than a competitive bid basis, negotiated purchases be made on a competitive basis.**

Competitive negotiation, as favored by Senator Javits, would require that the services solicit bid proposals from two or more sources and negotiate the contract on the basis of the competitive proposals.

The remaining measure affecting military procurement, intro-

duced by Senator John J. Williams (R.) of Delaware (S. 1383), **calls for the use of competitive bidding "to the greatest practicable extent in the procurement of property and services by the armed forces".**

Enactment of legislation radically changing military procurement policy is not considered likely in the coming session. The Department of Defense at the present stage of its procurement history prefers to change its purchasing practices by revision of the Armed Services Procurement Regulations, rather than by Congressional enactment.

In any review of Congressional developments affecting the purchasing agent, tax revision is certain to be an important item. During the coming session, **there is bound to be consideration of change in policy with regard to depreciation of equipment, including such proposals as the use of replacement cost rather than original purchase price. However, no legislation in this area is likely to be enacted in the upcoming session.**

Christmas Gifts

(Continued from page 78)

by top management, but most are compiled by individual salesmen, subject to the sales manager's approval.

• 70% of the companies giving gifts make provision in the budget for the necessary expenditures, thus controlling costs. They are most frequently charged to sales expense. Other accounts to which the costs are charged: miscellaneous expense, advertising expense, travel and entertainment expense, public relations expense.

• Many companies prefer to give their own products as Christmas gifts. Otherwise, the most popular gifts are liquor and foodstuffs. Next come items that are useful in the home or office—cigarette lighters, glassware, etc.

One significant note: only two of the nearly 300 companies surveyed plan to increase their giving of business Christmas gifts this year.

Survey results are discussed at length in The Conference Board Business Record for November.

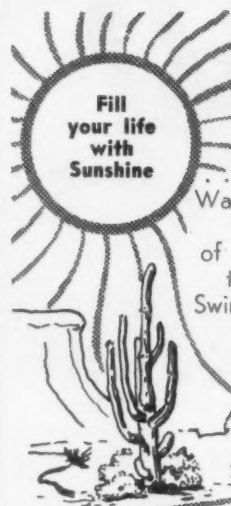
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Season:
Nov. 15
to May 1

another of the great



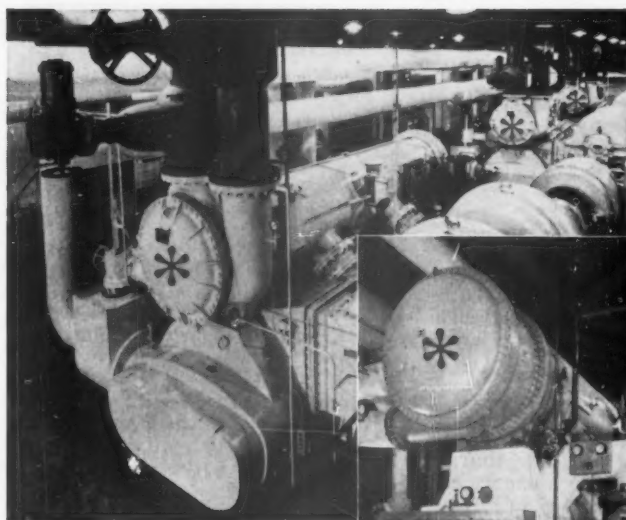


Wolverine Trufin Type S/T.

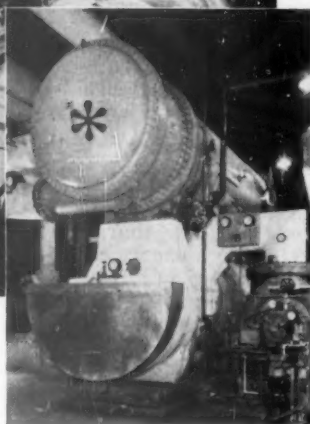
Gateway Center, Pittsburgh, Pa.



WOLVERINE TRUFIN® TYPE S/T helps *Carrier* cool GATEWAY CENTER



These four Carrier units have a total cooling capacity of 7500 tons—1500 tons each for the three top machines and 3000 tons capacity for the lower and newer machine.



Carrier engineers have high praise for Wolverine Trufin Type S/T—the integrally finned refrigeration condenser tube. They speak from experience in using Trufin in Centrifugal Refrigeration Machines for air conditioning the buildings of Pittsburgh's beautiful Gateway Center.

"The ability of Trufin Type S/T to pack a lot of heat transfer surface into a small space, helps us design refrigeration machines which require a minimum of space and weight for the required cooling capacity," say the Carrier men.

In the Gateway Center installations, more than 200,000 feet of integrally finned Trufin Type S/T, was used in the coolers and condensers of three 17M64 Carrier Centrifugal Refrigeration Machines of 1500-ton capacity each, and one 3000-ton capacity 17PM470 Carrier unit.

If your company is involved in refrigeration, air conditioning or other heat transfer applications, Wolverine Trufin Type S/T can help you do a better job—just as it does Carrier Corporation.

For complete information write for your copy of the Trufin Catalog.

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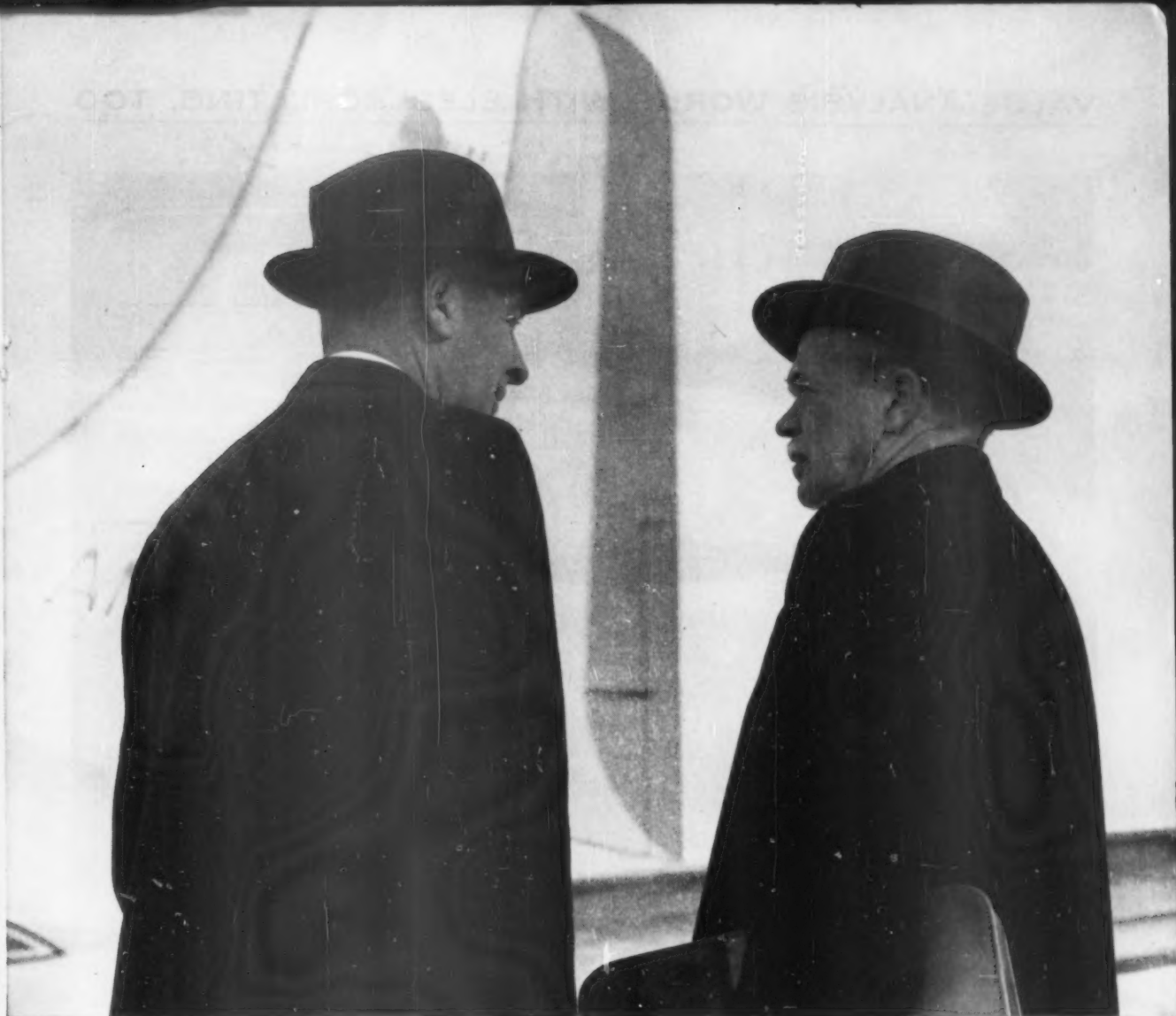
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For More Information Write No. 244 on Inquiry Card—Page 32



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WEIRTON, WEST VIRGINIA

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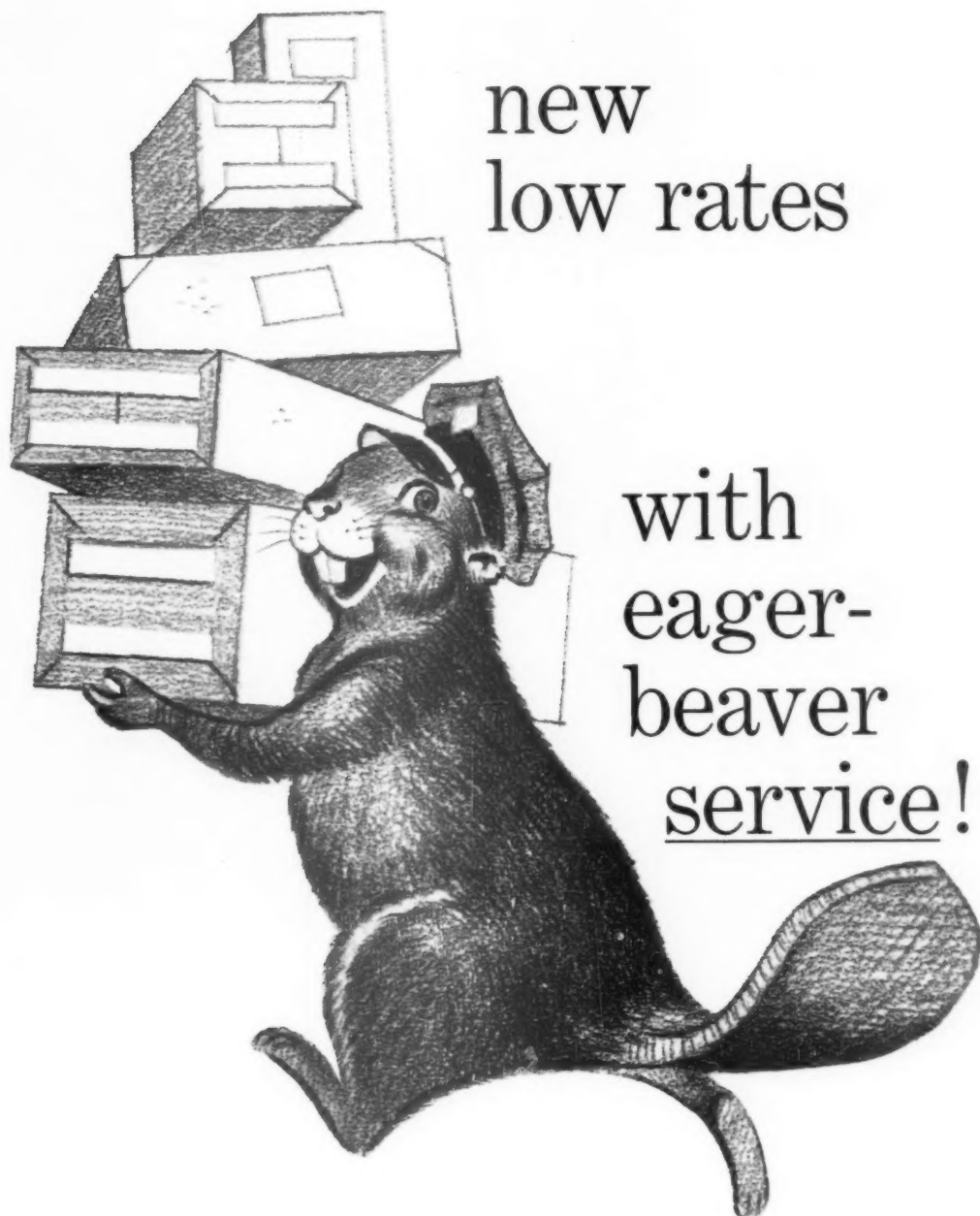
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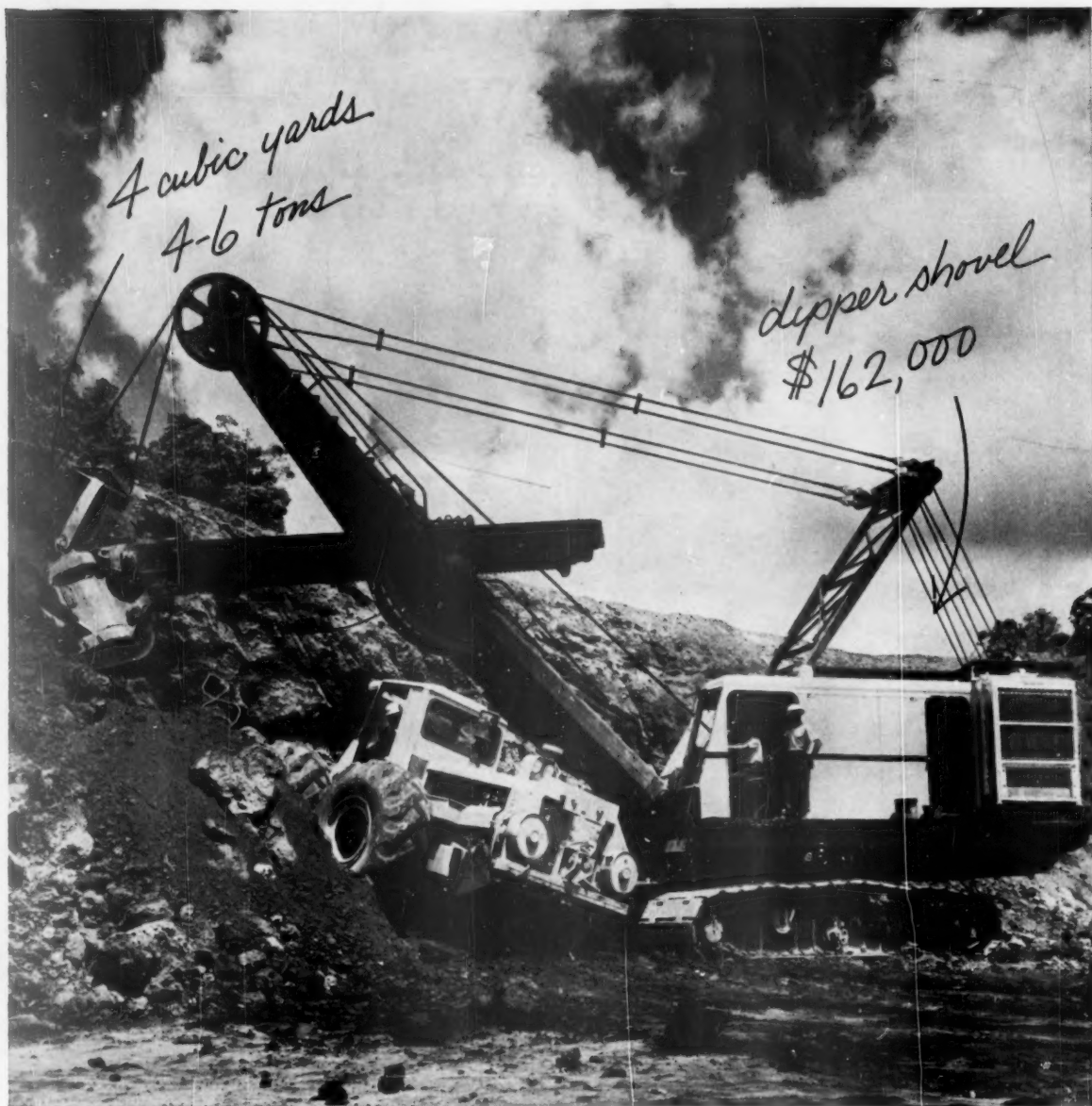
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*When you're talking
about a \$162,000
dipper shovel, you've got to
talk about
the best
rope for it*




Talking about or working with, the same thing applies. Anything below Royal Blue's performance level is simply unrealistic. Like looking for a cut-price brain surgeon.

Even at \$162,000, the cost of wire rope is important. That's why so-so ropes can cost you more in the long run, because so-so ropes are *short run*. Royal Blue, on the other hand, is built by America's oldest manufacturer of wire rope to last, to do the job without a whimper. Here's why.

Royal Blue is made from the toughest rope wire ever made—Type 1105—extra high-strength improved plow steel. This pedigree gives to the rope qualities that you can't find in any other rope: exceptional resistance to shock, abrasion, fatigue and impact. Add to these a flexibility that age cannot wither nor hustling fade and you've got a collection of characteristics that make Royal Blue the strongest rope you've ever used.

A \$162,000 Dipper Shovel deserves the best and your Roebling Distributor has it... Royal Blue. For information, write to Roebling's Wire Rope Division, Trenton 2, N.J.

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